



SCUBA

TIMES

The cover of SCUBA magazine features a vibrant photograph of two dolphins leaping from the water. The dolphins are captured in mid-air, their sleek bodies arched as they move towards the left. The water around them is splashing, creating a dynamic and energetic scene. The magazine's title, 'SCUBA', is partially visible at the top in large, bold, yellow letters. Below the title, the text 'THE ACTIVE DIVER'S MAGAZINE' and 'JUNE 1997' is printed in a smaller, white font. The main headline, 'SPEARFISHING TO KILL OR NOT TO KILL', is written in large, bold, white capital letters. Below this, 'SOUTH AFRICA' is also in large, bold, white capital letters, followed by 'JAWS OF THE LAND AND SEA' in a slightly smaller font. At the bottom, 'ARTIFACT HUNTING IN THE RIVERS OF AMERICA' is written in large, bold, white capital letters. The overall design is clean and professional, with a focus on the natural beauty and adventure of diving.

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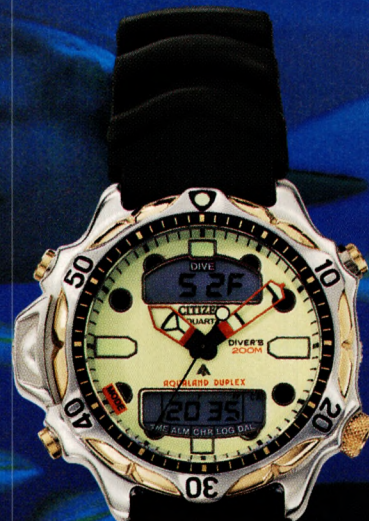
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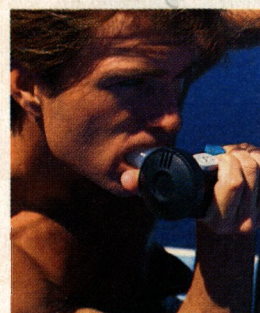
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FEATURES

- 12 SHARK SAVES DOLPHIN** — A *Scuba Times* Exclusive
Under the cloak of darkness and shrouded in danger, Navy SEAL, "Mark the Shark," embarks on a last-resort mission to rescue wild dolphins from their dens of doom. This exclusive true story by W. E. Thackrey gives us an inside look at a covert operation — where a man chances the ultimate sacrifice to save a majestic creature of the sea.
- 16 TOP OF THE CHAIN** — Surf and Turf in South Africa
Ever wondered how a lobster feels as it sits in the viewing tank at a restaurant, looking back at its soon-to-be consumer? Larry Clinton hung around great whites and lions and experienced that same feeling. He reveals his experiences of becoming the viewee rather than the viewer as he visited the big animals of South Africa.
- 20 CLOSE ENCOUNTERS OF THE MANTA KIND** — Winging it in Baja
You travel to Muncie, Indiana. Your flashlight mysteriously loses power. The mail boxes begin shaking on the side of the road. Then, with miraculous speed, strange lights fly by you . . . leaving you with a sunburn on the side of your face and so screwed up you build mountains out of mashed potatoes in your living room — or, you can go to Baja, just as Eric Hanauer did, to encounter mantas on such a personal level it will leave you in awe.

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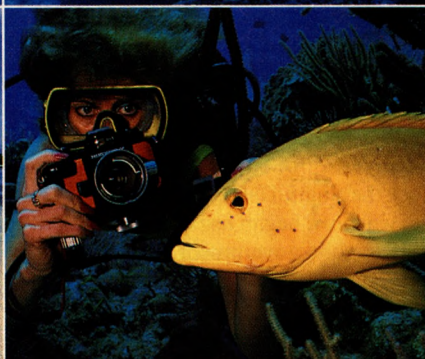
Cover Shot: Originally photographed in their tank, these Atlantic bottlenose dolphin are now leaping in a state of digital freedom with the aid of photographer David Fleetham. But for the real story of freedom see pages 12-15, where wild dolphins are liberated from their deadly captivity by the aid of a Navy SEAL.

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NUMBER 3
MAY/JUNE 1997



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The Evil Fred clone.

Over the years of writing this column, I've somehow managed to annoy and generally tick off just about every segment of our readers. Believe me, this has not been a goal of mine. Somehow, when I spoke my mind, it just seemed to happen naturally.

Early on, about seven or eight years ago, my editor's photo showed me wearing a mask on my forehead — a perfectly innocent pose. Or so I thought. That really got the dander up of the anal-retentive, strictly-by-the-book crowd. The letters poured in chastising me for promot-

ing this horribly unsafe act. "You're supposed to wear the mask around your neck, like you were taught," they screamed. So, we changed the photo to one of me without any mask at all. I figured that was the safest course of action. But I still put my mask on my forehead after a dive. It's more comfortable.

Then there were the women. Oh, those wacky feminazis. I'm sure I made countless female enemies when we did our *Sport's Illustrated*-like divesuit shoot. Some female readers went ballistic, as if we had drugged the models and forced them to pose in diveskins at gun point. We didn't, by the way. Hey, my wife was even one of the models, and she wouldn't condone that sort of activity. Eventually, we used men (bare-chested men at that) and women models and went to meticulous lengths to try to photograph them equally. But letters still came in accusing us of exploiting women. No one cared about the men. It became apparent that there was no way to win that battle, and we scrapped the whole shoot. This was not really because of the protests, but the whole thing was getting kind of boring for us anyway and we had much cooler articles to tackle (refer to Operation Sub Tech, Jan/Feb 1997 issue).

More recently, it seems I've become enemy Numero Uno of the NRA. I made an off-the-cuff comment about the NRA and BAMM! The letters, faxes and Emails poured in accusing me of being some radical, anti-American who was against the Bill of Rights. Strangely, the majority of the letters were from South Dakota. Something weird must be going on up there. Oops, there goes the South Dakota readership.

I drew criticism from some big business folks when we began using an eco-friendly printing paper. The entire staff of the Dominican Republic government put me on their black list for calling the DR a Third World country. Most of the Caribbean dive operations practically burned me in effigy when we published the first *Advanced Diving Journal* and "promoted" unsafe diving. And, of course, our dive master and instructor readers blasted me for questioning the strength of some certification programs.

Upon close examination, I think there still might be a narrow demographic segment of unemployed male readers from southwestern Iowa between 34 and 35 years old that I haven't ticked off in some way over the years. But what the hey, this year ain't over yet.

Which finally brings me to my point. At the risk of getting the hackles up of more readers, let me just say that I spear fish for edible consumption. I contend that anyone who eats fish has no valid argument against spearfishing. If you're a fish eater, you're contributing to fish harvesting in some form or fashion. And don't try to tell me that there is somehow a more humane way. Bottom line . . . the fish on your plate is dead.

And why am I telling you about my spearfishing activity? Because this issue of our *Advanced Diving Journal* is dedicated to spearfishing — both the pros and the cons. There's some outstanding thought-provoking writing in there and, you never know, the articles may change the way you look at this age-old activity.

Speaking of controversy, this issue opens with an exclusive article about a clandestine dolphin rescue in Mexico. You know how you hear stories about dolphins saving humans in distress. Well, chalk one up for us people. It seems a former Navy SEAL sneaked into a mucky dolphin pen where the unsanitary water conditions were causing numerous dolphin deaths, and he set them free. A rainy, moonless night and a closed-circuit rebreather helped to assure his success. Needless to say, the owners of the pens were not thrilled. But the dolphins, well, they were quite happy about the whole thing.

Finally, if I have ever offended you, your family, your pets, your occupation, your hairstyle, your race, your creed, your car, your choice of fast foods, your religious or political beliefs or any concept about anything which you believe to have even the slightest shred of truth, then I just want to say, lighten up and let's go diving together sometime. I'm really not that bad of a guy.

That's it from here. Enjoy. ■

Fred D. Garth

SCUBA TIMES

Publisher/Editor-in-Chief Fred D. Garth
fredg@scubatimes.com

Editor Christopher Grant
chrisg@scubatimes.com

Art Director Scott Bieberich
scottb@scubatimes.com

Production Manager Toni Renee White
toniw@scubatimes.com

Creative Consultant E. Blair Fischrupp
blairf@scubatimes.com

Advertising Manager David Benz
davidb@scubatimes.com

Advertising Representative Melinda Moore
melindam@scubatimes.com

Advertising Representative Betsy Archer
betsya@scubatimes.com

Office Manager Cindi Thomas
cindit@scubatimes.com

Accounting Manager Dianna Dudley
diannad@scubatimes.com

Fulfillment Director Charlene Moseley
charlenem@scubatimes.com

Circulation Director Pennie Dismukes
pennied@scubatimes.com

Dive Store Coordinator Alma Quinones
almaq@scubatimes.com

Internet Site Administrator Wayne Getchell
wayneg@scubatimes.com

Contributing Editors

Kevin J. Freeland • Karl Shreeves • Marty Snyderman
Bret Gilliam • Tom Morrissey • Franklin Viola • Ed Weber
Doug Perrine • Jean Pierce • Norbert Wu • Scott Frier

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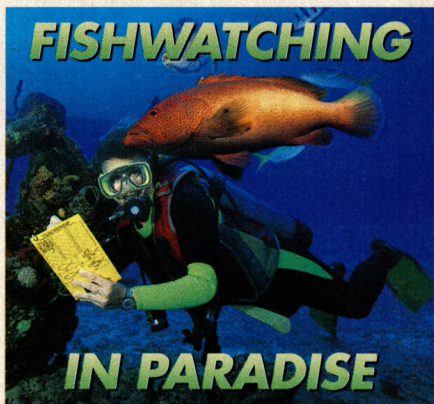
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THE C CARD KING

Who Is This Guy and What Is He Thinking?

He is Ken Helinski of Buffalo, New York, and this is what he is thinking.

"Some day I hope to make my distinction in the *Guinness Book of Records* in my unique category of Most Specialty Certifications in Recreational Scuba Diving. So far, *Guinness* does not think there is enough interest by its readers to justify making this category," stated the determined Ken.

Well, how did this man's quest (a man with obviously too much time on his hands) get started and how far has he taken it?

"I completed my PADI basic open-water class in November of '82. Since those first dives, I have moved up to Open Water Instructor from six agencies worldwide. My highest rating to date is Instructor Trainer from IDA, and I hold a distinct position of being one of only two U.S. divers who are Master Instructors (Instructor Trainers) from the University of Turkey," boasted Ken.

"I have (to date) 189 certification cards



which are represented by 19 agencies in four countries and are stored in an accordion style cardholder which extends to 40 feet, 6.5 inches," proclaimed Ken.

"The most interesting and exciting courses I have taken were Shark Diver & Shark Awareness, and the most pointless was Boat Diver. My immediate goal is to obtain at least one certification card from every scuba agency worldwide."

So, what else does Ken get out of this?

"One of my pleasurable moments is having to show my C card to dive shop personnel when I vacation," smiled Ken.

It is now up to *Guinness* to commit Ken's dream (not Ken) to legitimacy.

If you want to contact Ken or maybe offer him your own unique certification, he can be reached via Email at Scubaken@Earthlink.net

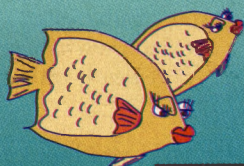
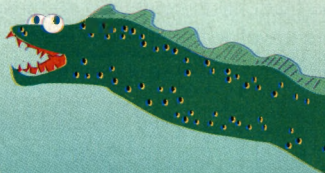
Following is the list of Ken's certifications as of February 1, 1997:

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NASE Open Water	NAUI Cavern Diver	Scubapro Air II Warranty Card	NASDS First Aid For Divers
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PADI Underwater Photography	NSSCDS Intro to Cave Diving	Nikonos UW Photography Club	NASDS Kayak Diver
NASE Underwater Photography	NASE Cavern Diver	PDIC Wreck Diver	NASDS Marine Life Awareness
PADI Equipment Specialist	National Assoc Of Cave Divers	ACUC Advanced Scuba Diver	NASDS Master Diver
NASE Equipment	National Assoc Of Cave Divers	ACUC Boat Diver	NASDS Multilevel Diver
PADI Advanced Open Water	NASE Limited SafeAir User	ACUC Cavern Diver	NASDS Night Diver
NASE Advanced Open Water	ANDI Nitrox Diver	ACUC Deep Diver	NASDS Open Water
PADI Rescue Diver	ANDI Gas Blender	ACUC Divemaster	NASDS Oxygen Administration
NASE Rescue Diver	ANDI Service Technician	ACUC Drysuit Diver	NASDS Physics & Physiology
PADI Search & Recovery	PDIC Marine Environment	ACUC Equipment Specialist	NASDS Relocation & Recovery
NASE Search & Recovery	NASE Diver Medic	ACUC Night Diver	NASDS Rescue Diver
PADI Physiology	NASE Diver Physics & Physiology	ACUC Oxygen Provider	NASDS Shark Diver
NASE Diving Physiology	NASE Dive Site Procedures	ACUC Underwater Photography	NASDS Underwater Navigation
PADI Cetacean Awareness	NASE Drift Diver	ACUC Ice Diver	NASDS Underwater Photography
NASE Cetacean Awareness	NASE Ice Diver	ACUC Rescue Diver	NASDS Underwater Video
PADI Master Diver	NASE Marine Ecology	ACUC Search & Recovery	NASDS Wreck Diving
NASE Underwater Naturalist	NASE Marine Environment	ACUC Underwater Navigation	NASE Open Water Instructor
PADI Underwater Naturalist	NASE Marine Life Awareness	ACUC Wreck Diver	NASE Specialty Instructor
PADI Wreck Diver	NASE Research Diver	PADI Medic First Aid	MDEA Open Water
NASE Wreck Diver	PADI 50 Dive Card	PADI Medic First Aid Instructor	MDEA Advanced Open Water
PADI Boat Diver	PADI Reef Fish ID	PADI Instructor	MDEA Deep Diver
NASE Boat Diver	PADI Shark Awareness	DAN Oxygen Instructor	MDEA Drysuit Diver
PADI Night Diver	PADI Hollywood Diver	PADI PPB Instructor	MDEA Night Diver
NASE Night Diver	PADI Shark Diver	PDIC Dive Site Procedures	MDEA Rescue Diver
PADI Deep Diver	NASE Shark Encounter	PDIC Search & Rescue Diver	MDEA Search & Recovery
NASE Deep Diver	PADI Cavern Diver	PDIC Underwater	MDEA Wreck Diver
PADI Kayak Diver	PADI Peak Performance	Photographer	IDEA Open Water Instructor
NASE Kayak Diver	Buoyancy	PDIC Stress & Rescue Diver	IDEA Nitrox Instructor
PADI Multilevel Diver	NASE Advanced BC Control	IANTD Instructor	IDEA Buoyancy Control Instructor
NASE Multilevel Diver	SSI Century Diver	PDIC Nitrox Diver	IDEA Dive Medic Instructor
PADI Dry Suit Diver	SSI Boat Diver	PDIC Night Diver	IDEA Oxygen Instructor
NASE Dry Suit Diver	SSI Night Diver	PDIC Deep Diver	TDI Nitrox Instructor
PADI Computer Assisted Diver	SSI Navigation Diver	PDIC Boat Diver	NASE Specialty Instructor
NASE Computer Diver	SSI Equipment Techniques	PADI Oxygen First Aid Instructor	ACUC Divemaster
NASE Emergency Rescue Diver	SSI Stress & Rescue Diver	PDIC Safety Computer Diver	CMAS Open Water Instructor
PADI Underwater Navigator	SSI Underwater Photography	PDIC Dry Suit Diver	IDA Scuba Diver
NASE Underwater Navigator	SSI Deep Diver	NASDS Advanced BC Control	IDA Scuba Diver
PADI Oxygen First Aid	SSI Dry Suit Diver	NASDS Advanced Open Water	IDA Advanced Scuba Diver
NASE Oxygen Provider	SSI Search & Recovery Diver	NASDS ANDI Complete Safe Air	IDA Master Scuba Diver
NASE Reef Fish ID	SSI Master Diver	NASDS Boat Diver	IDA Scuba Instructor
PADI Underwater Videography	SSI Computer Diver	NASDS Cavern Diver	IDA Master Scuba Instructor
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NASE Advance II	PDIC Research & Technical Diver	NASDS Dive Supervisor	Instructor
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Exception

We read with great interest the February 1997 article on regulators by Kevin J. Freeland. It was very informative; however, we take exception with the segment on where to buy. The public was not informed until the end of the article that the opinion of the writer is biased, being that he is a local dive shop owner. We feel the writer should not have written any opinions that might be in his interest vs. the consumers interest. We can and do service all of our customers and have much repeat business.

Hoping you have the courage to print my comments.

Phil Grant
Leisure Pro Ltd

(Editor's note: Leisure Pro is a mail order catalog company for dive gear.)

While consumers have many buying choices, we still recommend buying life-support equipment such as regulators through dive stores, where expertise and service are on hand. Because of that, we allowed the writer, a dive store owner, to express his views even though we knew they were biased.

Garth Bashing

I really think your magazine is cool. I would like to see more articles about expeditions and advanced diving. Also less travel ads or write articles on other destinations that aren't mainstream (like the Baffins Islands). I think the NRA people are a bit too sensitive about what Garth said. Good show.

Jason Becker
via Internet

Ditto

I really enjoyed Nancy Sefton's article Reef of Dreams, and my heart felt strange on the reading. But the best part is the last part when she talks about the effects that the divers have on corals in relations with her dream site. All this made me think about diving and its future.

Living in Quebec City, Canada, I don't often have the chance to dive in areas with beautiful corals. But when I did have the chance, the images that my eyes captured stayed in my head and soul just like Nancy's reef of dreams.

Chris Legendre
Quebec City, Canada

Buddy Needed

I am semi-retired and still diving at age 67. Please tell me if there is a diving organization for older men and women that specializes in diving trips for older but still active people.

Now that I have more time to do the things I want to do, I find that it is difficult to locate divers my age to travel with.

Can you help me with this problem?

Richard D. Vechorik
Starkville, Mississippi

If you're into the Internet, check out Scuba Times Online's Buddy Central for all your dive-buddy needs. If you're not web literate, ask one of your grandkids to help.

Well Done

I really enjoyed Fred Garth's Cocos rebreather article The Great Hammerhead Bubble Phenomenon, January 1997 issue. It was very well written — funny, entertaining, and not too macho. Well done. I couldn't put it down. That's the kind of stuff that keeps people re-upping their subscription.

Jonathan Bird
Oceanic Research Group

Maybe Not . . .

I read your article in Scuba Times about hammerheads and rebreathers. And I have to say that while I found it most interesting, I was offended by the tone you took with regards to the researcher assigned to Cocos. Was it really necessary to wonder aloud whether the wrench used on the shark could be used on her?

You might consider cancelling the sexist BS and sticking to diving. Or do you hold one equivalent to the other?

Mary Buffington
mbuff@netcom.com

Another Viewpoint

As a gun owner and scuba diver, I was amused to read your surprise when deluged with outraged mail from NRA members. As the ridiculously disproportionate response to your comments demonstrate, the NRA has long since ceased to represent the interests of ordinary gun owners

and has degenerated into a haven for extreme right-wing elements. Former U.S. President George Bush, among others, resigned his NRA membership when a senior NRA representative published comments apparently condoning armed attacks on law-enforcement agents.

Oppose yourself to their bizarre view of reality and you will be thanked by the civilized majority of gun owners. Regrettably, you will be subjected to hecktoring, bullying, and inflamed rhetoric from their rabid supporters. Such is the price of defending civilization from ideological zealots and two-bit barbarians.

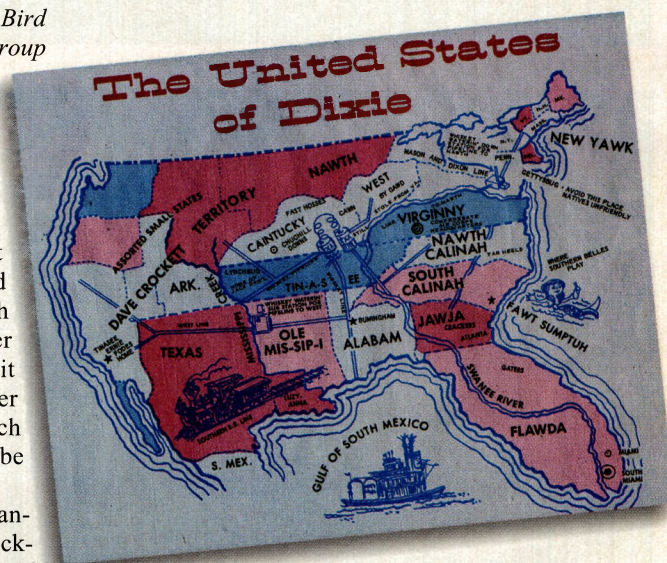
Peter Meisenheimer
Guelph, Ontario

Where Am I?

All my life I thought I was living in Michigan, but by looking at the Dive America map on page 30 in the January 1997 issue, I've been on the wrong side of the lake.

By the way, where is Wisconsin?

R.E. Claypool
Wisconsin or Michigan



First we thought it was our editor's and art director's personal biases towards Michigan because they are from Ohio and Indiana respectively. But when we checked with our map expert, Billy-Bob Bubba Bohevis (we just call him "Joe"), and located his reference map, we discovered the root of the problem. See for yourself.

Address letters to Scuba Times Magazine, 14110 Perdido Key Drive, Suite 16, Pensacola, Florida 32507, or contact us via CompuServe at 73241,1037, or the Internet at www.scubatimes.com — Not all letters can be published and may be edited for space and clarity.



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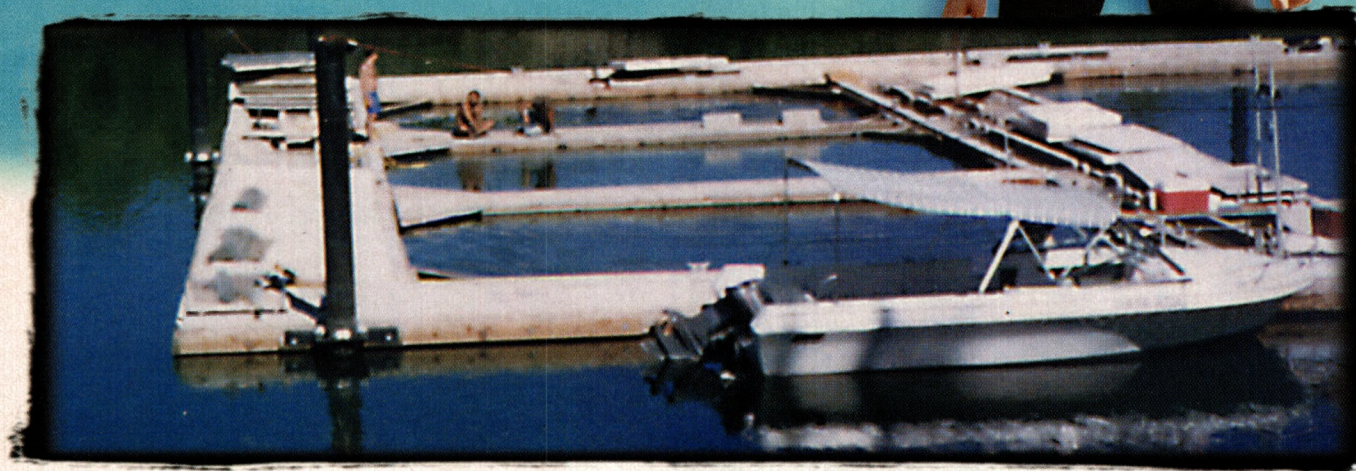
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The following story is true. The events described in the article occurred during January 1997. While the capture and display for public “entertainment” of wild mammals is certainly a controversial topic, the content of the following article does not imply that *Scuba Times* condones illegally freeing mammals in captivity in Mexico or any other location.

SHARK SAVES DOLPHINS

TEXT BY W. E. THACKREY



Puerto Vallarta: Located just north of Acapulco, this lush vacation spot is popular for *Norte Americanos* and others who love to fish, dive, sail or just relax on the beach in a tropical, mountainous setting. And it was this boomtown on Mexico's Pacific coast which recently became embroiled in a controversy over the inhumane treatment of marine mammals. Visitors and locals alike became distraught over dolphin carcasses spotting the shores of a nearby estuary, upstream from one of Puerto Vallarta's marinas and resort hotels.

The culprit was an ill-conceived, underfunded “dolphin experience” attraction under development by enterprising local businessmen. While keeping dolphins in captivity has always inspired debate, most dolphin experiences have won high marks for the conditions under which the animals were maintained. This dolphin project was different. The backwater estuary was plagued by brackish, unhealthy water, and the operation suffered from inexperienced trainers and inadequate equipment. The result: an unacceptable toll in dolphin lives.

Despite outcries from concerned tourists and local residents, the local constabulary was unimpressed. Dolphins are not well protected in Mexico, and therefore, no local laws had been broken. The culprits were “just trying to make a living.” As a result, no legal action was taken against the offending enterprise.

One of the American visitors to Puerto Vallarta, Jim (not his real name), was so furious that he made the decision to take the law into his own hands. If the authorities couldn't stop the loss of life, he'd field a team that would. With a bit of planning, research and investigation, he organized an effort to free the mammals — at night, under the cloak of darkness.

A little networking in the emerging rebreather industry back in the States yielded a referral to an individual whose reputation seemed ideal for the proposed project. A former U.S. Navy SEAL, known to his teammates as “Mark the Shark” (also an alias), was working as a rebreather instructor and consultant. Jim contacted him concerning a proposed mission to free the dolphins.

“Are you sure you wouldn't rather

call Greenpeace?” Mark suggested. Jim replied, “No, we need a mercenary type. The place is guarded at night. The water conditions are horrible. This is not the kind of thing for Greenpeace. We need a professional.”

Mark was attracted by the challenge, and he wanted to help the mammals escape danger, so he accepted the job. He'd been trained for this kind of mission. To use those skills to benefit dolphins sounded like a fine idea. He had read the numerous reports from antiquity to the present time of dolphins coming to the aid of drowning humans, perhaps merely a habit of boosting newborns or sick members of the group to the surface to breathe as a matter of survival or perhaps reflecting a special affinity with humans.

In proportion to body size, cetaceans (dolphins, porpoises, and whales) have the largest brains of any animals except humans. The word *dolphin* has its origin in the Greek word for womb, *delphus*, and the sea-womb monster of mythology, Delphyne. The taxonomic name for the dolphin, in fact, is *Delphinus delphis*. The U.S. Navy had once used dol-

© W.E. Thackery, Inset: © Mark the Shark

A four-hour drive eastward through Cape wine lands brought me to the resort village of Gansbaai, where the South Africa White Shark Research Institute does its thing. Founded in 1986 by Craig Ferreira and his father, Theo, a pair of reformed sports fishermen, the WSRI is a non-profit organization dedicated to preserving and educating the public about the *Carcharodon carcharias*, which was once dubbed "nature's perfect eating machine" but now has been hunted nearly to extinction. In 1991, South Africa became the first country to declare the white shark a protected species, based partly on WSRI findings indicating a serious decline in breeding stock. In addition to viewing (and helping with) the WSRI's research work, certified divers can actually hop into a cage to meet these magnificent predators up close and personal.

My anxieties over my own introduction to white sharks intensified over three days until the Indian Ocean calmed and we were able to negotiate the three-mile passage to Gyser Rock, home to a large colony of Cape fur seals (the main food source for local great whites).

Craig anchored his 22-foot launch in about 18 feet of 50-degree water and began ladling out chum. Next, he fastened a chunk of washed-up seal blubber to a tethered float and let the current carry it down stream. The rest of us kept busy lowering a cylindrical steel-mesh cage over the side, adjusting cameras and making lame jokes to relieve the tension.

Craig claims a virtual 100 percent success rate in great white sightings, as long as the weather permits him to get out to Gyser Rock. But the guests of honor are sometimes fashionably late. After a half-hour of fidgeting, Craig pointed out a dark shadow in

the distance, and everyone scrambled to the starboard rail for a closer look. We all pointed and hooted when the shadow slowly circled closer and began to take shape. Anxiety was soon replaced by awe as the 15-foot, 2500-pound stalker glided by with effortless grace. I could almost feel the shark's mind and sense organs working as it warily sized us up.

Finally the great white took the bait with Craig pulling on the tether as if the shark were a large dog with a rawhide toy. During this brief tug of war, the shark exposed enough underbelly for Craig to note the absence of claspers, or male sex organs. So we knew a lady had come to call. Craig estimated that she was 15 years old, just reaching sexual maturity. The shark spat out the bait after giving us a glimpse of her fierce power, but Craig had succeeded in enticing her closer to the cage.

It was time to jump into the floating two-man cell. Christophe, a German photographer, was already in the cage breathing from a hookah rig with a pair of second stages. Now my anxieties were replaced by a sense of urgency. What I had to do was drop into the cage, then quickly get the extra second stage in my mouth and shut the mesh cover. Oh, and not get eaten.

TRAVELINFO South Africa

South Africa Airways serves both Cape Town and Johannesburg (closer to Sodwana Bay) from New York or Miami. To get the most out of a visit, it's best to make arrangements with a tour operator familiar with local diving conditions and operations, such as Dive the Big 5, which arranged my escorted trip. Offering a variety of itineraries incorporating diving, safaris and cultural attractions, Dive the Big 5 is represented by a number of U.S. travel agents or can be contacted directly by phone or fax (27) 13 750 1832 or by Email divebig5@iafrica.com



Surface Intervals

South Africa's diversity provides plenty of thrills besides diving.

World famous Kruger National Park offers a chance to see the "Big 5" land mammals (elephant, lion, buffalo, leopard and rhino), with a range of facilities and services to fit every budget. There are many private reserves featuring game drives in open vehicles, bush walks with armed rangers and hearty meals served in open air *bombas* warmed by roaring fires at night.

At a luxury reserve called Phinda, I watched a pride of lions devour an eland no more than 40 feet away. At Honeyguide, a tented safari camp adjacent to Kruger, barking baboons woke me in the middle of the night, and my afternoon nap was interrupted by the staff shooing away an elephant who had wandered in to eat leaves off the camp's trees.

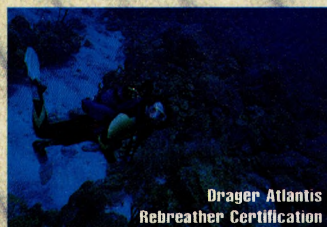
South Africa has demonstrated a strong commitment to preserving its natural and cultural heritage. On a visit

to the Zulu village of Kwabhekithunga, Chief Thomas Fakude greeted us in full Zulu regalia. Before sitting down to a meal of stewed lamb lungs over *pap*, a maize meal similar to grits, we were entertained by the chief's daughters who performed a topeless courting dance, and by a visiting *sangoma* (diviner), who demonstrated occult rituals still practiced by many Zulus.

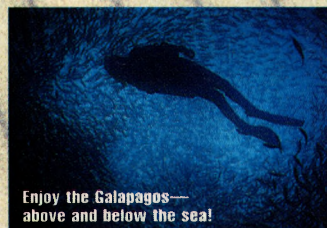
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While Christophe and I got ourselves sorted out, the shark swam directly beneath us, her back appearing as wide as the cage floor beneath our feet. We could see the scars and notches of a difficult adolescence as she cruised past.

It was around that time that I realized how buoyant I was in my full wetsuit, even with double weights on. To keep from floating up and out of the cage, I was grasping the mesh with one hand, and the term "finger food" began to take on unpleasant connotations. While adjusting my grip, I also noted that the cage had drifted several feet away from the boat, connected only by our hookah hose and a nylon line that looked like something the shark might floss with.

Christophe's power winder was smoking as the great white approached the bait right in front of us. She distended her lower jaw, rotating her hinged teeth into attack position. Nictitating membranes rolled protectively over her eyes as she struck, and she gave the bait several good shakes before spitting it out and continuing directly toward us. At the last second, she executed a lightning one-eighty, her tail brushing far enough into the camera opening of the cage to scratch the dome port on Christophe's underwater housing. We'd been flipped off by a master.

I was convinced that the more time I spent with the great whites, the more they'd have to teach me, but my itinerary called for me to move on. The next stretch of coast heading east comprises the Garden Route, which offers diving conditions similar to the Southern Cape Coast and the chance to watch Southern right whales court, mate and calve between June and November, with humpbacks and Bryde's whales also making occasional appearances.

Further north, on the Natal Coast, Protea Banks and Aliwal Shoals attract an incredible array of sharks. Sand tigers (spotted ragged-tooth sharks or "raggies" to the locals) hang out here year round, and from September through May, divers are also likely to encounter Zambesiz (bull sharks), duskies, spinners, coppers, tigers and all three types of hammerheads, on the trail of migrating pelagic game fish.

Africa Dive Adventures introduced us to raggies at Protea Banks, off the town of Margate. Curious but not aggressive unless provoked, six-foot adults approached to within a body length before snapping away like hot rodders burning rubber.

At Aliwal Shoals, we made some dives with the legendary Andy Cobb, who offers a specialty shark-diving certification for advanced divers. Andy pointed

out several raggies framed in the impressive underwater proscenium, which opened on a coral-encrusted bowl called the Cathedral. The raggies' long, uneven dentures definitely kept us from breaching any of Andy's rules of shark etiquette.

Among the hard and soft corals of Protea Banks and Aliwal Shoals, we also encountered ocean catfish, turtles, scorpionfish and lots of colorful reef critters. But for true tropical diving, we had to move on to Sodwana Bay in the Maputland region, some 200 miles north. This preserve, part of the Greater St. Lucia Wetland Park, boasts a series of reefs designated by their distance from the launch site. Two-Mile Reef is the most heavily utilized and is a favorite training site for dive schools from all over South Africa. On busy weekends, the beach is crammed with boats and divers waiting to launch, so midweek is the best time to visit.

In three days, Amoray Divers took us to different dive sites on all but Nine-Mile Reef, and the profusion of hard corals and huge tropical fish was truly impressive. The Amphitheater at Seven-Mile Reef is a favorite hangout of turtles and rays. Five-Mile Reef is known for its great variety of pristine coral. At various locations on Two-Mile Reef, we encountered 100-pound potato bass, geometric and honeycomb morays, blue spotted rays, soldier bream and blue-banded snapper. Depths ranged from 50-60 feet with surge and currents building noticeably from the first to the second dive each day.

Prime time at Sodwana Bay is March through June. Water temperatures are always above 70 degrees, rising to 82 degrees in December and January when divers frequently encounter manta rays, whale sharks, dolphins and other large pelagics. From October through February, loggerhead and leatherback turtles can be observed laying their eggs in the sandy beaches.

Although Americans are still rediscovering South Africa after years of official sanctions over apartheid, I found the country quite hospitable. Signs of our culture are everywhere, from fast-food outlets to the omnipresent U.S. sitcoms on television — even in black townships. The biggest adjustments are driving (and walking) on the left and metric measurements.

If you want maximum adventure with minimum hassle, South Africa has it all. ▀

Author of The Complete Outfitting and Source Book for Sport Diving (published 20 years ago), Larry Clinton started diving in 1955, 12 years after Cousteau. He now lives on his houseboat in Sausalito, CA and is awaiting another assignment.

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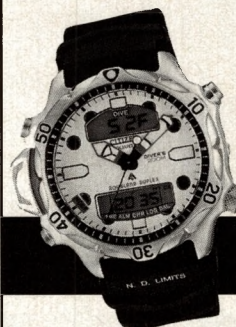
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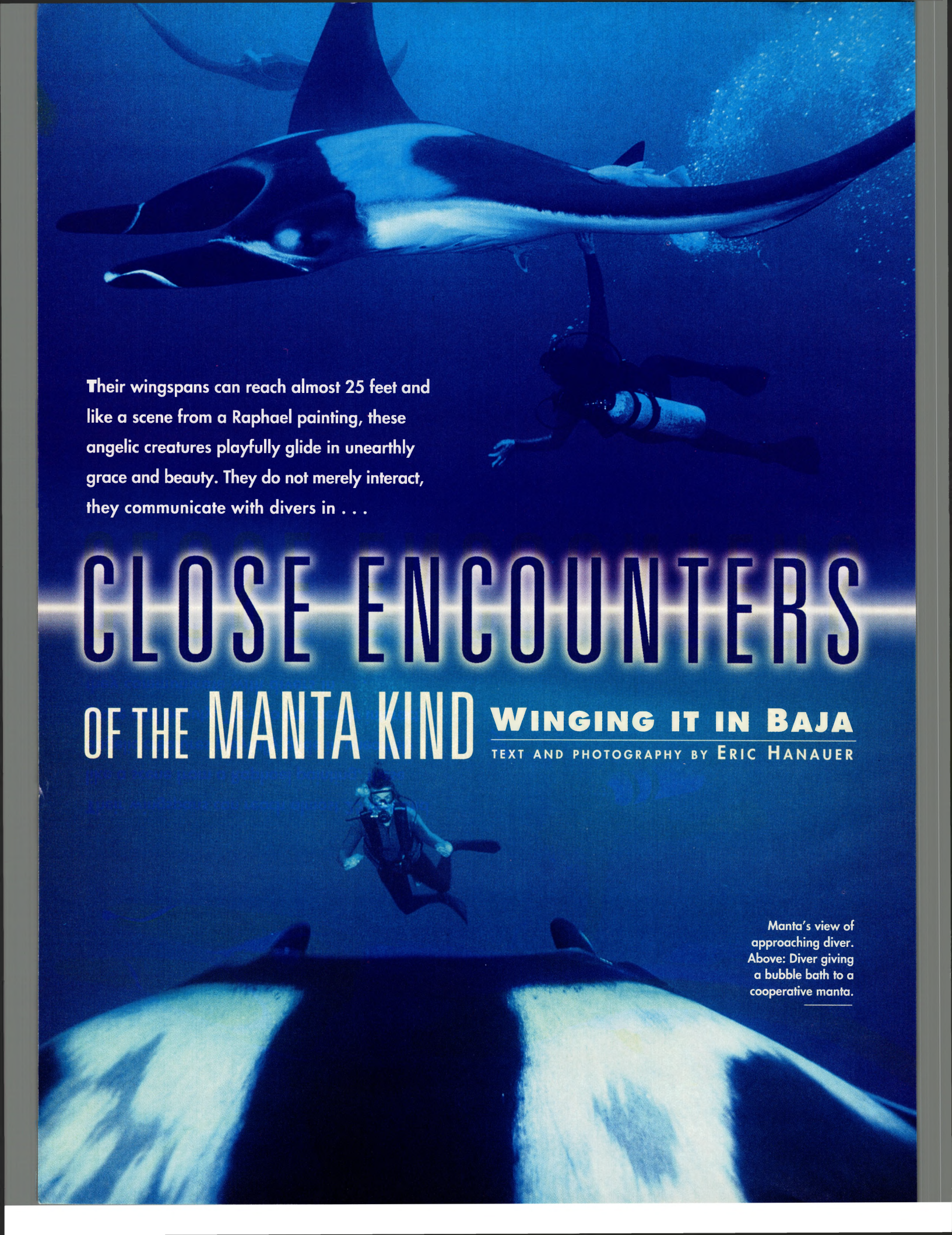
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Photography Credits: Stephen Frink, Courtney Platt



Their wingspans can reach almost 25 feet and like a scene from a Raphael painting, these angelic creatures playfully glide in unearthly grace and beauty. They do not merely interact, they communicate with divers in . . .

CLOSE ENCOUNTERS

OF THE MANTA KIND

WINGING IT IN BAJA

TEXT AND PHOTOGRAPHY BY ERIC HANAUER

Manta's view of approaching diver. Above: Diver giving a bubble bath to a cooperative manta.

*What's the secret of great photography?
"F:8 and be there."*

That quote, probably apocryphal, has been attributed to several top shooters. But it's also apropos for those divers who have seen lots of pretty reef fishes and colorful corals and are ready for encounters with something big. If you want to see the big guys, you have to be where they hang out.

One such place is Baja California. El Bajo, Gorda Banks and the Revilligedos Islands have long been renowned as the haunts of big guys: schooling hammerheads, manta rays, marlins, tunas, whales and whale sharks.

Among the three, the Revilligedos (pronounced Re vee u hee hay dos) is the least familiar. Sometimes called Mexico's Galapagos, it's an archipelago of three islands and one large pinnacle located 220 miles south of Cabo San Lucas. It takes about 22 hours to get there on the liveaboard *Solmar V* and an additional day to travel from the nearest, San Benedicto, to the furthest, the seldom-visited Clarion.

Big-animal encounters worldwide are a lot more common than they used to be. Frequent *National Geographic* contributor, Flip Nicklin, says that whales are much easier to approach than when he started photographing them because they have become used to the non-threatening presence of divers.

Mantas brains are more complex than those of some mammals.

The intelligence and learning capacity of whales is common knowledge. But on two trips, a year apart, I've observed those sorts of behaviors by manta rays at San Benedicto. Close encounters with any marine animal larger than a human is a thrill, but when each species alters its behavior to accommodate the other, actual communication is taking place.

Scott Sundby, a guide who has been diving with the mantas for three years, states, "They've got to be the most intelligent of the sharks and rays. Sharks are

dumb; all they want is food. Sharks have no memory. If you punch one in the mouth, it will come back 30 seconds later and forget it was punched. A manta will remember months later to come to the divers to feel the bubbles. I really believe they are the most intelligent fish. The interactions with divers here are a lot like with marine mammals. That may be the only measure that they aren't so smart, the fact that they aren't afraid of us."

Before you dismiss that statement as rampant anthropomorphism, consider a scientific view. Glenn Northcutt, a neuro-anatomist at Scripps Institution of Oceanography, has found that mantas have the largest ratio of brain-to-body size of any elasmobranch and that their brains are more complex than those of some mammals. He has no doubt they are capable of learning and even of play.

This activity happens at The Boiler, an underwater rock formation that looks like a huge layer cake and serves as a manta cleaning station. Divers may touch the mantas but aren't allowed to wear gloves to protect the animals' skin. It's got a sandpapery feel, like shark skin, so gentle pressure saves your fingertips as well. Mantas become almost docile when you touch them, slowing down so you can keep up. Sometimes they press their bodies against your hands, as if to encourage more contact. When you can feel their heart beating through your fingertips, that's communication on an intimate level.

Once I got too close to a wingtip while filming, and my mask was knocked off. But usually the mantas would glide by with one wingtip carefully uplifted to keep from hitting me. Some individuals were calm, others a bit skittish, but all seemed to enjoy the feel of bubbles on their skin, changing course to swim directly over our exhalations. Some divers would swim directly underneath a manta for several minutes, the animal slowing its pace to remain over the bubbles.

To someone who hasn't been there, this activity might seem more like harassment than interaction. Scripps

Getting to the Revilligedos

The *Solmar V* liveaboard travels to San Benedicto and Socorro islands November through May each year. Departing from Cabo San Lucas, it takes about 22 hours to get to the islands.

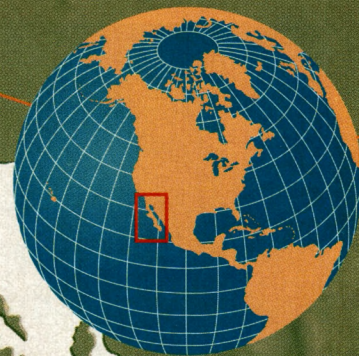
Diving the Sea of Cortez

Once the exclusive province of off-roaders and big-game fishermen, the Sea of Cortez has become an international-class dive destination. From La Paz, you can visit the sea lion rookery at Los Islotes and the seamount at El Bajo, renowned for schooling hammerheads. From Cabo San Lucas there's the submarine sandfall and the canyon at Anegada and Gorda Banks, home of schooling tuna, hammerheads, and an occasional whale shark. Cabo Pulmo, also accessible from Los Cabos, has a series of shallow finger reefs with profuse fish activity.

Before proceeding any further, one caveat is necessary. In wild places like the ocean, nothing is guaranteed. Baja isn't an underwater petting zoo; big animal encounters are at the option of the animal. You can expect the unexpected, but while the locations are fairly predictable, the exact times of these encounters aren't.

Both La Paz and Cabo San Lucas are serviced by numerous dive operators and hotels. Check with your dive-travel specialist for specific details.

San Diego
Tijuana



Sea of Cortez

La Paz

Cabo San Lucas

220 miles

Clarion

San Benedicto

Socorro





Manta beginning its acrobatic dance.

ecologist Mia Tegner doesn't think so. She states, "The biologist in me doesn't like to say they are enjoying this, but if they didn't, they'd be out of there in a microsecond." She slipstreamed one for five minutes, then after she let go, it returned for another trip. Slipstreaming is a less intrusive alternative to riding the ray. You swim over the top, your chest about six inches off its back, but not touching it. The animal slows down, and you are carried along in its laminar flow, barely kicking to keep pace. Not every manta allows this, and if they don't want it, they let you know simply by swimming away.

Three divers would typically enter the water with one or two mantas present, and within five minutes, a half dozen more would join in. As many as a dozen mantas gracefully soared around us like sleek stealth bombers. At times like that, I realize how slow, clumsy and inadequate we humans really are underwater.

Each animal is usually accompanied by hitch-hikers: two large, gray remoras. Their suction disks leave marks on the mantas' skin that look like sneaker footprints. Remoras don't tolerate divers, often darting to the other side of the ray when we came too close. Tiny white copepods infest their skin, but very few spill over to the manta. The cleaner fish occasionally service them but focus most of their attention on the rays.

I wondered if this is too good to last, if the mantas' trust in humans would be betrayed. In 1993, a visitor filmed a Mexican fishing boat spearing a manta, cutting off its wings, and throwing the carcass back into the ocean. The video was shown extensively in Mexico, trig-

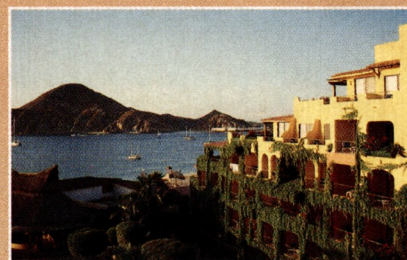
gering a public outcry. The following year, the government declared the Revilligigedos a protected biosphere, a higher designation even than a national park. No commercial fishing is allowed within 12 miles of any island, and there is a \$10,000 fine for killing a giant manta. Every visiting boat must check in at the Navy base on Socorro Island and show permits from the national ecological institute, fish and game department and the Navy. In conjunction, diving and sport-fishing operators have formed a volunteer organization, Seawatch, which reports any infractions to the Navy via radio. They, in turn, can call in air support from the mainland. Perhaps this, combined with the distance of the islands, will spare these friendly mantas the fate that befell their predecessors at El Bajo in the Sea of Cortez over a decade ago.

Although the mantas overshadow everything else at San Benedicto, if you can break away for a while, you'll be rewarded with schooling jacks and hammerheads. I've also seen Galapagos sharks there and a 12-foot tiger shark. Hammerheads and other shark species are also common at Socorro and Roca Partida, along with dolphins and visiting pelagics. For fish fanciers, tropicals typical of the Panamic region crowd the reefs and the water column.

The Revilligigedos is a trip back in time to the early days of Baja before it became a popular tourist destination. If the environmental controls now on the books are enforced, hopefully they will remain that way. ■

Eric Hanauer is a frequent contributor to Scuba Times Magazine.

Land's End Diving



© Betsy Archer

Early Spanish explorers believed that the Baja Peninsula was actually an island filled with Amazon women and Aztec gold. The rumors proved untrue, and explorers soon left the harsh terrain. The real treasures remained beneath the Sea of Cortez.

Our dive group dropped in the cool Sea of Cortez water at a site called El Bajo. Here, three pinnacles rise to a depth of about 50 feet and serve as an attraction for large oceanic animals. During the summer and fall, the area is frequented by mantas, schooling hammerheads and the occasional whale shark. After a few minutes in the water, we began to notice distant shadows of unmistakable shapes. The pinnacles were being visited by a large school of scalloped hammerheads. They swam in huge, slow circles around the pinnacles. These were the real treasures.

The coast from La Paz south to Cabo San Lucas in southern Baja California is rich in diving experiences. El Bajo, with its pinnacles and pelagics, and the friendly sea lion colony at Los Islotes are the most famous dive sites near La Paz. Traveling further south, Cabo Pulmo is the only living coral reef on the Pacific Coast of North America. But the prolific marine life in the form of huge schools of silvery fish, tons of eels and pufferfish are the main attraction.

Mantas, gamefish, turtles, sea lions and spectacular underwater topography define the diving in Cabo San Lucas. The best dive sites are in Cabo San Lucas Bay — the Submarine Canyon with its sand falls, the sea lion colony at Playa del Amor and the shallow pinnacles at Land's End. Luckily, all are a five-minute boat ride from the marina. Cabo San Lucas was once a sleepy Mexican fishing village. Unlike most resort towns, the tourist sprawl has been kept to a minimum, and new additions harmonize with the desert landscape. The town's Latin charm blends easily with a relaxed California attitude. The marina is stuffed with flamboyant fishing boats, U.S. ports boldly stenciled on the back. The American influence is unmistakable, but not overwhelming. Diving is secondary to golf and fishing, making Cabo San Lucas the perfect place for vacationing families and groups.

— by Betsy Archer

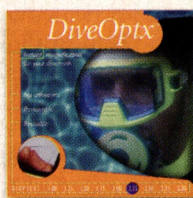
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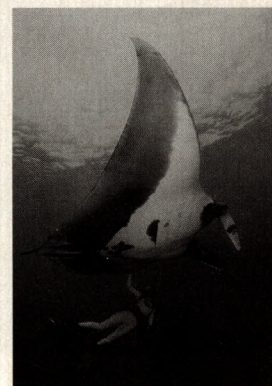
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DIVE AMERICA

Special Artifact Hunting Edition

Diving with alligators is a hazard associated with underwater artifact hunting in St. Johns river.

© Bret Forbes

Antique hand-blown glass bottles and camel's teeth.



St. John's River, FL

Unusual varieties of antique bottles dating back to the turn of the century and meticulously carved arrow points from past Indian civilizations can be found buried throughout the muddy bottom beneath the black water of the St. John's River. And if divers are lucky, they might even discover bones from such prehistoric creatures as mastodons, rhinoceroses, camels, and saber-tooth tigers, all of which roamed Florida sev-

eral thousand years ago. However, diving for artifacts in the St. John's River can be a treacherous endeavor presenting hazardous conditions for the inexperienced artifact-hunter.

Zero to three-foot visibility is perhaps one of the most obvious hindrances for the diver combing the river bed for artifacts. Because the visibility is so low, artifacts must be located by digging and feeling

the bottom with your bare hands. This creates many hazardous situations for the diver which include: being cut by broken glass, metal or other debris; becoming entangled in fishing line or tree branches; ending up in an overhead environment without realizing it; and encountering dangerous animals, such as alligators and venomous snakes.

An alternate means of searching for artifacts is by utilizing a sifting screen. Artifact-hunters can easily use this device while standing in shallow water or snorkeling. This is also an excellent way to discover many smaller types of artifacts, for example, arrow points that can be as much as 1,000 years old, prehistoric shark and camel teeth dating back over 50,000 years, prehistoric animal bone fragments and even small antique ink wells.

One of the best ways to access the St. John's River and experience an artifact-diving adventure is by boat since there are so many prospective sites to be discovered along this waterway. While diving in the river, one must be sure to display a dive flag because of the heavy presence of boat traffic here — especially barges.

As far as rules on taking artifacts

from the St. John's River are concerned, they are not allowed to be removed without obtaining permits from the State of Florida, which are issued exclusively through the University of Florida. However, prehistoric shark teeth may be taken as long as they are not removed from within a state park boundary. For more information on obtaining permits contact:

University of Florida
College of Natural History
P.O. Box 117800
Gainesville, FL 32611
(352) 392-1721

— by Bret Forbes

St. Clair River, MI

The bottle was obviously a corker. Crudely embossed and riddled with air bubbles, the words "Emerson Drug Co." slowly came to light for the first time in nearly 100 years. A scant two-and-a-half inches tall, cobalt blue and in perfect condition, it is little wonder that this and other relics entice divers to risk the acrobatic entries, miles of fishing line and the near-zero visibility encountered while diving Michigan's St. Clair River.



© Dave Long

Discovered more than 300 years ago by French explorer LaSalle, the St. Clair River forms the natural boundary between Eastern Michigan and Ontario, Canada. Divers will find, with few exceptions, that diving the St. Clair River is a challenge unequaled in the state of Michigan.



Conditions in the St. Clair River can change drastically and range from ideal — with visibility approaching 20 feet, with schools of fish and multiple shipwrecks on a single dive to Braille — with low visibility, strong currents and dangerous overhead traffic.

Divers seeking a calmer environment and not averse to cold water — water temperatures rarely break 70 degrees and are often much less — will find that St. Clair River dive sites are usually accessible year round. Too fast to freeze in the winter, ice flows traveling from Lake Huron to Lake St. Clair in early spring are the only cause for major river closings. A full wetsuit or drysuit with hood and heavy gloves are the minimum year-round recommended protection from the elements, as well as from manmade debris.

Divers planning a visit to Michigan's St. Clair River can contact any one of several local dive operators. They will be more than happy to answer any questions you may have and offer services just minutes from popular points of entry.

Although not recommended without a thorough orientation, the St. Clair River is a truly unique Michigan dive site. Littered with century-old shipwrecks, antique bottles and schools of fish, it should come as no surprise that the St. Clair River has emerged as a favorite Michigan dive site.

— by Nick Lenzi

Hilton Head Island, SC

On the south eastern tip of South Carolina's coast lies a chain of small barrier islands. These islands are separated from the coast by the intracoastal waterway, Port Royal Sound to the north and the Calibogue Sound to the south. Various rivers terminate throughout the area, creating a diver's paradise for what we have found as a fossil and artifact collector's treasure chest.

Dive sites are accessible from shore or boat. Dive guides are available to provide escorted tours at various sites by contacting local dive stores. As in any new or unfamiliar site, an area orientation is highly recommended.

Diving? Well, what about it? Let's go! We set up our gear looking out across the Maye River. We had decided that megaladon teeth (prehistoric shark) were the order of the day. The dive began at Brighton Beach. Working our way out to approximately 42 feet in depth, the hard, coarse sandy bottom indicated we were close.

Turning to the west, we were there. Fossilized shark's teeth, approximately four million years old, lay scattered around beneath us. Imagine being the first to see and touch something this old. You become filled with an incredible feeling of accomplishment and awe at your discovery. Remnants of the past now become real. We surfaced and compared finds and made notes about our discoveries.

Dive number two, again in the Maye River, this time at the dock on Calhoun Street. We reviewed our dive plan and set out to retrieve pottery or bottles taking us back to the steamship days on the river in the mid 1800s. We were successful. Soda-water bottles with rounded bottoms marked 'Belfast, Ireland' were our best find. When we surfaced, we realized a stop at the library would be necessary to verify our findings.

The bottles in fact were used as ballast in ships coming from Europe and were stored in racks in the hull. The bottles were then off-loaded and exchanged for

goods to be taken back for the return trip.

Diving the rivers and sounds off Hilton Head Island is very rewarding. Discovering the past by being an active part of the process has become an obsession for local divers and visitors alike.

Diving to collect fossils and artifacts provides data and historical information for all to share and enjoy. South Carolina's waters are protected and require a Hobby Divers Collection License to enable you to participate in the sport. The South Carolina Institute of Archeology & Anthropology regulates these licenses and requires that a report be filed on your findings. To obtain a license or for more information, contact the Institute (803) 762-6105 or a dive store in the area.

— by Joe Pelletier

For More information on local dive sites see the Dive Store Directory located on page 90



This 4 1/2 inch fossilized tooth, shown at actual size, provides evidence of the enormous size of the prehistoric *Carcharodon megaladon*. Recently, a 6 1/2 inch fossil tooth was discovered in the May river by Joe Pelletier of Island Scuba Dive & Travel (888) 689-DIVE. Other teeth have been recorded up to 7 1/2 inches.



DEMAROUNDUP '97

TEXT BY KEVIN J. FREELAND

There can be no doubt that divers as a whole are gadget nuts who just love to see what is new and unusual. That type of mindset just might be at the root of what makes a diver a diver and what makes DEMA . . . well, DEMA.

The 1997 DEMA trade show in Orlando provided a bumper crop of new and innovative products. We at *Scuba Times* have sifted through the mountains of gadgets, to bring you the ones which caught our eye.

Atomic **Ti2 Regulator**

Serious Stuff. I mean very serious. The Atomic Ti2 Regulator may not glow in the dark, but it will certainly shine for years and years and years. The world's only completely titanium regulator is brought to you by some of the world's most renowned regulator engineers. First, it is light. VERY light. Next it is compact, not small, compact. Light, compact, yet loaded with features and innovations that push its performance levels to new uncharted waters. Features never before seen like the automatic flow control which adjusts the venturi effect as the diver descends. You really need to see this regulator to believe it. Atomic has raised the bar for all other manufacturers.

The Atomic Ti2 is not going to be for every diver. Its hefty price of around \$1200 will insure that it will not be appearing in a rental department near you any time soon. But for the serious diver, I mean very serious, the Atomic Ti2 will be the object of lust and desire for years to come. Contact Atomic (714) 375-1433 for the dealer nearest you.

Mares **Ruby Regulator**

No kidding, the Ruby Regulator is a real gem. The design folks at Mares have replaced the conventional high pressure seat with a precious stone, a ruby. The high performance MR 22 has been modified so that the perfectly smooth surface of the ruby gemstone causes a perfect seat. No leaks, no etching, no corrosion, just lots of performance and minimal maintenance.

Not for everyone, the Ruby weighs in at close to a thousand clams. But, for those who demand the best and are willing to pay for top performance, a Ruby could just be a diver's best friend. For more information, call (800) 874-3236 for your nearest Mares dealer.

SEAC SUB **ZX3000 Nitrox**

Are you finally convinced that nitrox is your best bet for safer diving? Ready to drag out the old regulator and go through the costly process of cleaning and converting it for nitrox use? Well hold on there partner, there just might be a better way after all. Created for use with nitrox, the ZX3000 comes ready to go with 100 percent oxygen-compatible parts. State-of-the-art design and outstanding engineering make this regulator a solid performer. And, it is ready to go right out of the box. The ZX3000 even includes a color-coded face plate that readily identifies it as a nitrox-ready breathing machine. Contact a SEAC SUB dealer nearest you.

Steam Machines **PRISM Topaz Rebreather**

What do you get the diver who has everything? How about the latest and greatest in closed-circuit mixed-gas rebreathers. The PRISM Topaz will transform your bubble-blowing days forever, and I am not just talking about the no more bubbles in the bubble-blowing part either.

The PRISM Topaz is a lightweight (38 pounds) unit specifically designed with the recreational diver in mind. Although the unit is capable of some pretty extreme stuff, it will comfortably give a minimum of up to three hours of bottom time within the current recommended depth limits of the recreational diver. (As if that's not extreme!)

Packed with so much proprietary technology that a kill-before-capture sign is required on all company employees, the PRISM Topaz could be the the wave of the future in user-friendly recreational market closed-circuit rebreathers. For the latest information, contact Steam Machines (310) 937-7556.



Backgrounds © Tanya Burnett

Oceanic **DATA PLUS**

I suppose all those snake oil pundits of the early '90s are snacking on Santa Ana Crow's wings in humble sauce. Nitrox is here to stay, and further proof arrives in the user-friendly and economical Oceanic Data Plus computer. All the reliability and user-friendly features that are common to the Oceanic computer line are here in the Data Plus. The Plus is the difference, and the plus is that this baby can be programmed for any mix of nitrox from 21 to 50 percent.

Using a Modified Haldanean Algorithm based on 12 tissue compartments and data from the Rogers & Powell studies, this unit is a perfect match for the recreational nitrox diver. To find out more, visit your local Oceanic dealer.

Cochran **Commander Nitrox Console**

The Cochran folks continue to amaze the diving world with some of the most innovative and creative products in the industry. In keeping with that tradition, the design department has produced a slick-looking console to house its popular Commander Nitrox computer. This low-profile design masterpiece allows the diver not only to view dive-critical data concerning decompression status but at the same time to view current gas-supply levels and navigational information. This instrument package puts all the vitals in line and in view. Whatever will they think of next? Visit a Cochran dealer today and see the future of diving.

TUSA **Cetus**

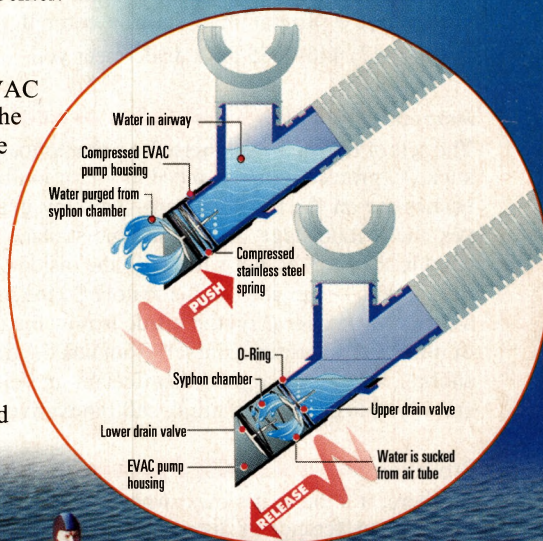
Yes, I have been guilty in the past of sending pollywogs in search of mail buoys, frequency grease, and the occasional left-handed crescent wrench. All in good fun, I assure you. But these new fins have definitely taken a bit of the humor out of one old standby, "Hey, you got your fins on the wrong feet!" The TUSA Cetus not only look different, but they behave differently too. The innovative Cetus compensates for a diver's tendency to kick inward and thus cause a twisting motion to the leg and in effect reduce the efficiency of the diver's kick. The Cetus reduces the blade surface on the inside of the leg and helps create a more balanced "flat" kick. Available in a plethora of colors and variety of sizes, the TUSA Cetus is certainly an eye catcher that will have all your buddies gathered around your gear bag. Just be careful. Putting them on the wrong feet will likely cause you to swim backwards. Get a close-up view at your local TUSA Dive Center.

Genesis **EVAC snorkels**

One of the first truly innovative snorkel products to come along in years, the EVAC lets the diver purge away water from the snorkel with a slight upward push on the patented EVAC pump. Designed to help make snorkeling and free diving a more pleasurable endeavor, the EVAC removes the need for a diver to blast away water before being able to draw a fresh breath. Now even a novice can feel comfortable clearing a snorkel and will remain safer as there is no need to teach complicated clearing maneuvers or to remove the snorkel from the mouth. For more information on how the Genesis group can pump you up, call (561) 733-4005 for your nearest Genesis retailer.

SEAmagine **SEAmobile Submersible**

O.K. I admit it. Since I was a kid, I have always wanted my own submarine. I used to see the ads in the back of my *Sgt. Fury Comics* and try hard to convince my mom to let me order one. Well, she never did, and I suppose you can say I am a victim of my own unrequited love. I still feel like a little kid every time I see something that remotely looks like a submarine. The SEAmobile Submersible will undoubtedly be the answer to someone else's submarine dreams. Driven from the rear by a safety diver/pilot or by one of two passengers in the one-atmosphere sphere, the craft operates much like a boat on the surface and then converts to a submersible driven by electric motors. Once submerged to an operating depth of 50 feet, the passengers have a 360 degree unobstructed view of the sea. Soon to be a hit at a resort near you. For information, call SEAmagine (909) 626-6262.



SEALAB **S.A.V.E.R System**

Not exactly a choke collar for divers but pretty darn near the same effect. So, ya wanna' disregard my warning and exceed the posted max depth limit. Don't care to watch your gauges either, eh? Well, I have a surprise for you, my wayward little pollywog. With the SEALAB S.A.V.E.R., a dive instructor or tour operator can pre-program the device to slowly inflate the diver's buoyancy compensator device when the allowable depth limit has been reached. Kind of a subtle hint to obey the rules. The S.A.V.E.R. can also function as a dumb-diver back up for those whose self-preservation instincts are just not as strong or whose minds are a bit dull by activating and inflating their buoyancy compensator when a pre-set gas-pressure level has been reached. There may not be a line drawn at 130 feet or a Scuba cop handing out tickets, but now there can be a big brother watching over you if you feel the need. For more information, call SEALAB (888) SEA-Lab1.

Neptune's Nectars

This stuff contains more alloys than my old aluminum cylinders. Magnesium, iron, zinc, copper, chromium, manganese, molybdenum and something called "solochrome" that I couldn't locate on my table of elements. I didn't know whether to drink it or use it to patch the hole in my wife's radiator. Containing over 30 minerals and vitamins, Neptune's Nectars help divers replace vital nutrients and electrolytes. It is also chock full of antioxidant protection. Supposedly divers who use elevated levels of oxygen, create high levels of "free radicals," which can cause oxidation problems.

Whatever it does, it must do it well because it sure isn't going to win any taste tests. I remember my first taste of castor oil. They told me that not all things that are good for me taste good. Proof, brussels sprouts. Further proof could very well be Neptune's Nectars. I still gotta wonder that if I just mix it up at half strength and use it to coat my steel cylinders, will I abate corrosion? Try it for yourself, after all, I learned to like brussels sprouts and really don't care much for lobster. For a supplier near you, call (800) 333-0866.

Dacor **EquaNOx**

Another entry in the easy-to-use, moderate price nitrox computer race. Dacor Corporation offers the EquaNOx as further evidence that nitrox is the wave of the future. Fully programmable for different mixtures and fully downloadable to a diver's personal computer, the EquaNOx fills a gap in the Dacor line of dive computers. Small, easy-to-read, backlit programs from 21 percent to 50 percent. There really is no excuse not to have a programmable nitrox computer. For more information, contact Dacor (847) 446-9555 for a dealer near you.

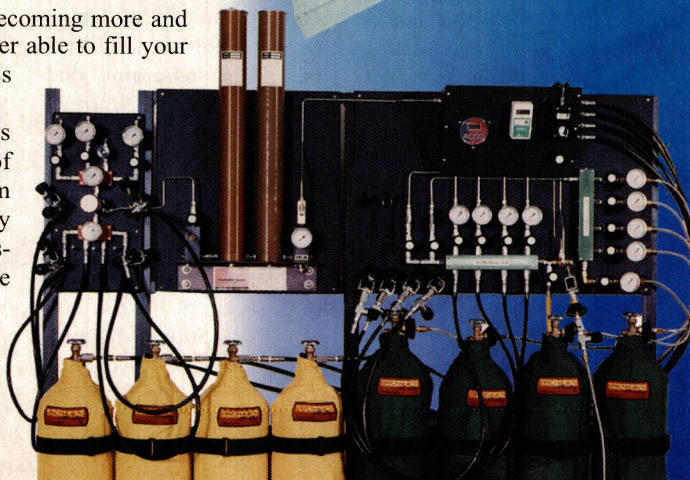
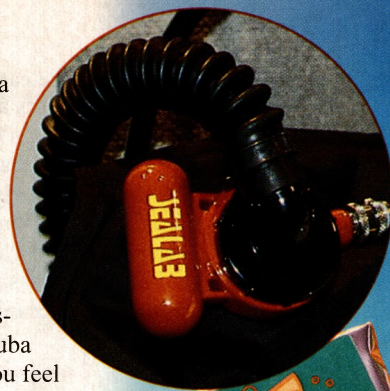
Amoeba **Scuba Guard (aka — scuba condom)**

The sell of fear is the sell here. Yes, the Amoeba Scuba Guard works — only if you stick the protected mouth-piece in your mouth and don't breath off of it. Whatever little nasties are on the mouthpiece — well, by gosh they're inside the second stage too. Ah yes, the second stage. A dark and moist place for things to grow, and let's not forget the bend in the snorkel. Let's recap — the inside of the second stage and the bottom curve in the snorkel — can you say incubator? So the mouthpiece is clean, but as soon as you take a breath, whatever is on the inside is now inside of you. But hey, at least you have piece of mind. So, to protect yourself from what's growing inside the second stage or inside the snorkel, well, only a good disinfectant and cleaning can do that. For more information and if you need piece of mind, call Innovative Scuba concepts (719) 597-2885.

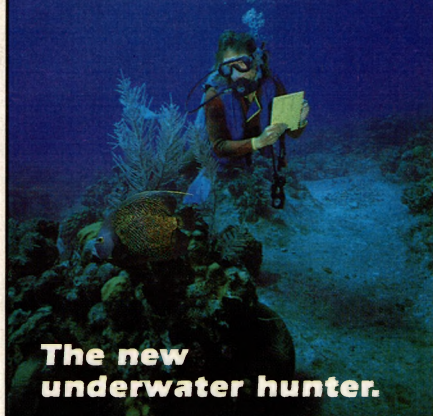
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Reef Fish Identification



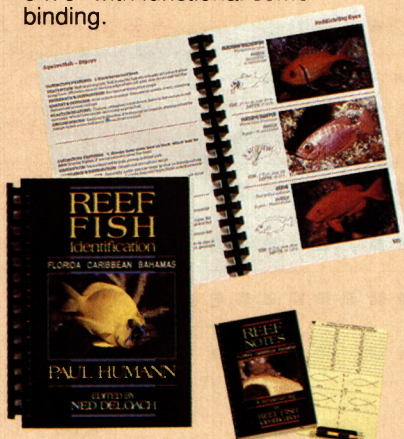
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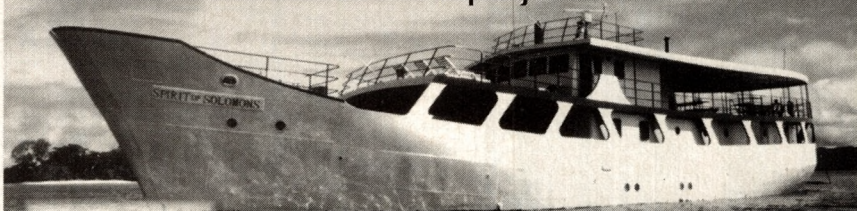
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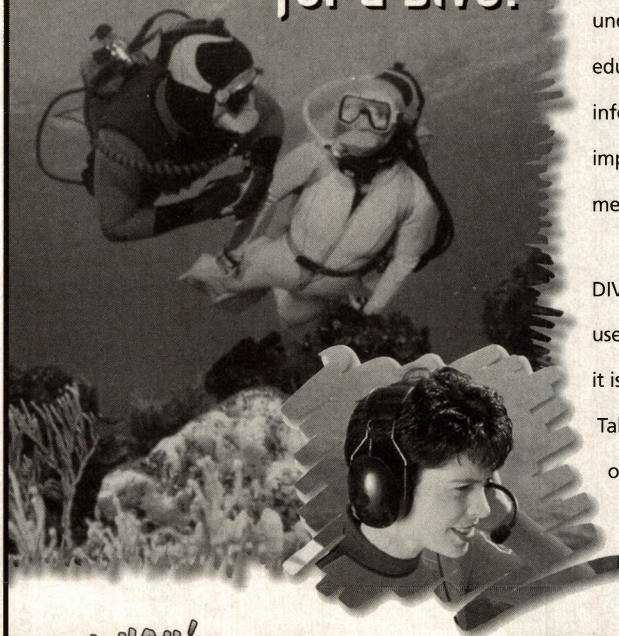
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LIVE ABOARD CHART

LODGING

SPECIFICATIONS

LIVEBOARDS BY DESTINATION		Average Retail Price in US Dollars/No. of Diving Days	Boat Length	No. of Tender Boats	No. of Crew	No. of Passengers	No. of Cabins with Private Heads	No. of Cabins with Shared Heads	Total No. of Cabins	No. of Heads for Passengers	Certification Course	U/W Photo Instruction	35 mm Camera Rental	Video Camera Rental	Video Edit. Equipment	E-6 Film Processing	Shore Excursions	Bar (alcohol)	Free Snacks/Drinks	TV in Salon	VCR in Salon	A/C in Cabins	A/C in Salon
AFRICA Kisiwani		\$1,295/6 days	67	2	5	10	0	0	5	3	□		□	□		\$	■	\$	■	■	■	■	■
ANTIGUA Mandalay 800-327-2601		\$1,500/8 days	236	3	28	72	34	2	36	36	□		□	□			\$	\$	■	■	■	■	■
AUSTRALIA Auriga Bay II 011-61-70-581408		\$2,475/10 days	58	1	3	10	0	0	5	21		■							■	■	■	■	■
Down Under Dive 001-61-70-311288		\$110/daily	140	1	12	42	0	17	17	9	\$	■						\$	\$	\$	\$	\$	\$
Elizabeth II *		\$2,970/10 days	108	3	8	13	12	1	13	12	■		■	■				\$	\$	\$	\$	\$	\$
Kalinda 011-6170-315255		\$280/3 days	70	1	5	25	0	9	9	3	■				\$			\$	\$	\$	\$	\$	\$
Nimrod III 800-346-6116		\$1,195/7 days	70	1	5	16	0	5	5	5	\$					\$		\$	\$	\$	\$	\$	\$
Ocean Quest 011-61-70-312223		\$303/3 days	98	2	10	38	9	7	20	13	■							\$	\$	\$	\$	\$	\$
Pacific Adventure 011-61-70-312223		\$303/3 days	72	1	4	20	7	0	8	7	■							\$	\$	\$	\$	\$	\$
Pacific Star *		\$1,856/7 days	65	1	5	10	6	0	6	6						\$	□	■	■	■	■	■	■
Sans Sauci 011-61-93-832018		\$3,000/7 days	78	2	4	14	2	3	5	4							■	\$	\$	\$	\$	\$	\$
Stella Maris 011-6170-315255		\$280/3 days	70	1	4	18	0	5	5	2	■							\$	\$	\$	\$	\$	\$
Spoilsport *		\$1,366/6 days	100	2	11	29	6	9	15	6	■							\$	\$	\$	\$	\$	\$
Supersport *		\$594/4 days	90	1	8	24	2	24	8	5	■							\$	\$	\$	\$	\$	\$
Taka II *		\$480/4 days	72	1	8	26	0	10	10	5	\$							\$	\$	\$	\$	\$	\$
Taka III *		\$480/4 days	93	2	14	34	0	12	12	13	\$							\$	\$	\$	\$	\$	\$
Watersport *		\$267/2 days	70	1	11	26	0	8	8	10	\$							\$	\$	\$	\$	\$	\$
BAHAMAS Amazing Grace 800-327-2601		\$1,075/8 days	256	4	40	94	24	23	47	94	□		□	□			\$	\$	■	■	■	■	■
Ballymena 800-241-4591		\$2,250/6 days	124	2	8	20	10	0	10	10	■		\$	\$				\$	■	■	■	■	■
Blackbeard's Cruises 800-327-9600		\$689/5 days	65	2	7	22	0	4	4	3	\$							\$	■	■	■	■	■
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Bottom Time Adventures 800-234-8464		\$1,295/7 days	90	2	5	28	0	15	15	15								\$	\$	■	■	■	■
Cat PPalu 800-327-9600		\$1,195/6 days	65	1	4	12	0	6	6	2	\$							\$	■	■	■	■	■
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SPECIFICATIONS

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 \$370/daily
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CARIBBEAN CURRENTS

OFF THE BEATEN PATH

Less-Traveled Dives in the Most Popular Destinations

TEXT BY DAVID KING



If your idea of a perfect dive vacation means getting away from everyone and everything, then traveling to heavily visited areas like Belize, Cozumel and Cayman may turn you off.

However, you may be surprised to find that even though thousands of people flock to the Big Six every year, there are still lots of deserted beaches and remote dive sites with pristine reefs when you travel Off The Beaten Path . . .

Snorkelers explore a remote reef at Water Cay, Cay Sal Bank Bahamas

© Doug Perrine

BAHAMA ISLANDS

Sprinkled like confetti between Florida and Haiti, the Bahama Islands obviously offer lots of chances to diverge from the main track. And there definitely is a main track. With daily cruise ships steaming in, from Florida and elsewhere, to the casinos, nightclubs and luxury hotels, some Bahama islands merge travelers directly into the fast lane.

However, encompassing over 300 miles and 700 islands, there are also a near infinite number of rest stops as well.

CARIBBEAN CURRENTS will be published in every issue of *Scuba Times* in 1997, covering the Big Six: Bahamas, Bay Islands, Belize, Cayman, Cozumel and the ABCs. The Big Six are defined as the six destinations which are visited by more divers each year than any other dive destination.

From the Out Islands and all the way south to Little and Great Inagua, the Bahamas define remoteness. But perhaps the prince of remote is Cay Sal, a 75-mile-wide seamount, only 40 miles from Cuba but still under Bahamian rule. Capped by a series of shallow reefs and barren rock islands, Cay Sal has reefs that are visited by only a few divers each year. It is also home to one of the highest concentrations of blue holes — deep-water connections to the fresh-water underworld — in the world.

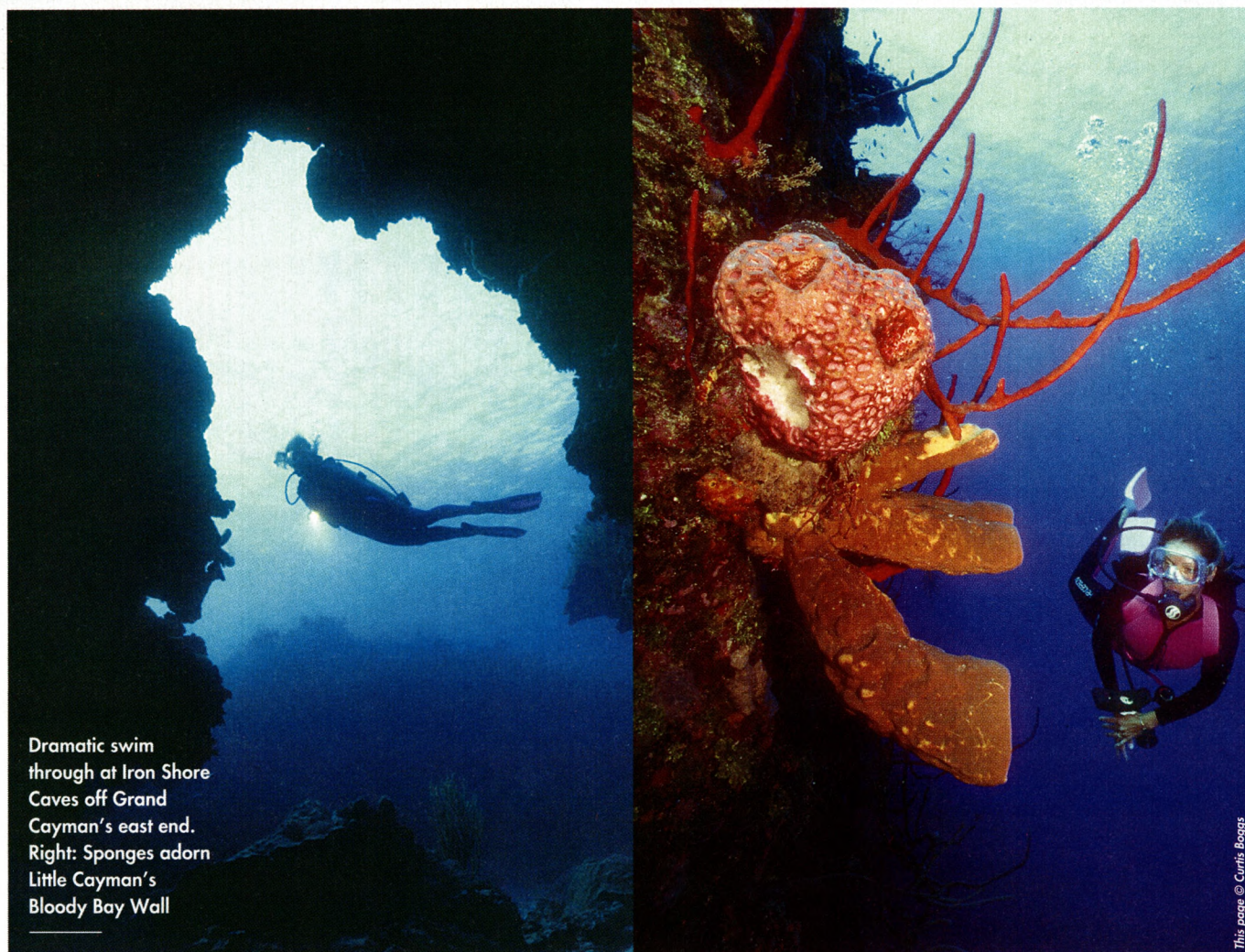
Only about 30 feet deep at its center, Cay Sal has blue holes that drop to over 300 feet. The blue holes are actually a series of sink holes that formed many years ago when the area was above sea level. When the sink holes collapsed, the limestone substrata was exposed. Now that the holes are underwater, coral has been able to attach to the limestone, creating beautiful coral gardens around the

rims of the deep holes.

Butterfly and parrotfish, eels and an assortment of sharks and other marine life live and feed in the deep holes, providing divers a chance to see a diversity of plant and animal life.

Lynn Dixon, who works for liveaboard dive boat *MV Nekton Pilot*, said Silver Sides is one of her favorite blue holes at Cay Sal Bank. The sides of the hole narrow toward its center, giving it the shape of an hourglass. Beneath that ridge at about 90 feet is a swim-through where silver-side minnows by the thousands create a spectacular sight when sun reflects off the massive school.

Sistine Chapel is another unique blue hole. Stalagmites adorn the hole at 90 to 100 feet. Dixon said Big Hole is another very active area where her operation has started leading shark dives. About 20 or 30 "very frisky" Caribbean reef sharks frequent the hole, and occasionally large



This page © Curtis Boggs

Dramatic swim
through at Iron Shore
Caves off Grand
Cayman's east end.
Right: Sponges adorn
Little Cayman's
Bloody Bay Wall

schools of sharp noses — a couple of hundred strong — show up for divers.

Diving blue holes requires that divers be very comfortable with buoyancy control, Dixon said, but it pays big dividends.

Not as isolated as Cay Sal, the Exumas chain isn't main street either. The Exumas remain far from the frantic hords of tourists and still offer some of the best reef diving in the entire Western Hemisphere. They're also home to a number of outstanding blue holes. Ed Haxby, a marine biologist who works at Exuma Fantasea, said there are four diveable blue holes around the out islands of Exuma. All four are spectacular, with two being good for novice divers and two reserved for the more advanced and technical divers.

Angel Fish Blue Hole is a vertical cylinder about 40 feet in diameter that starts at 30 feet and drops to 90 feet where it goes into a horizontal cave system.

"It's really spectacular," Haxby said.

Crab Cay Crevasse is a crescent-shaped hole about 40 feet wide and 120 feet long. It starts at about 40 feet and drops to 90 feet. At the bottom is a cave entrance about 30 feet by 60 feet.

At both Angel Fish and Crab Cay

Crevasse, divers can get a taste of cave diving (technically it's a cavern dive) without ever losing sight of the surface. Both sites also are home to a variety of marine life and draw visitors like eagle rays and sea turtles, Haxby said.

For more experienced divers, Mystery Cave and Master Harbor Blue Hole offer true cave-diving experiences. Master Harbor Blue Hole has been only partially explored, so there are areas where it's possible to be among the first handful of divers ever to see the caverns.

Visibility around Exuma ranges well over 100 feet, Haxby said. The area is far enough north that occasionally cold fronts that make it to Florida stir up some blustery days around the islands during the winter months.

Just east of Exuma, Long Island's slender form stretches for more than 90 miles. Its miles of uninhabited beaches and forests draw a fraction of the visitors found on more mainstream Bahamian islands. The underwater scenery is just as pristine. Sites like Barracuda Head and Shark Reef attract a wide variety of marine life. The wreck of the *Comberbach* sits upright in about 90 feet of water.

Although Andros is the largest island in the Bahamas chain, it is the least explored — perfect for those looking for a little off the beaten path adventure. The 120-mile barrier reef that parallels the Andros coast sports spectacular walls dropping thousands of feet. In addition, Andros is literally riddled with blue holes. There are oceanic blue holes that can be explored by a novice diver with a guide. The truly adventurous can explore Andros' inland blue holes. Diving them requires trekking through the jungle, but it is well worth the extra effort. Open-water divers can explore some of the inland blue holes with an experienced guide, but other holes require a cave-diving certification.

Other exceptional and pristine dive sites can be found in the southern Bahama Islands, particularly around Rum Key, San Salvador and Concepcion. Wall diving in those areas starts at about 50 feet and surrounds each of the islands. The walls are covered with huge sponges and coral, and the visibility is excellent. The southern islands are off the great sand bank that surrounds most of the Bahama Islands and can create lower visibility when the silt gets stirred up.

Concepcion is among Dixon's favorite dive spots. She claims that the island's wall diving is among the most spectacular in the world. Large groupers and hammerheads are common, and the island's best feature is that visitors probably won't see another boat while they are there.

CAYMAN ISLANDS

Sometimes finding your way off the beaten path is as easy as turning left instead of right when you leave the airport.

Grand Cayman's East End is an example. Only two resorts grace East End, leaving it unspoiled and "very much what Cayman used to be," said Mo Fitzgerald, operations manager for Ocean Frontiers.

The undeveloped side of the island also yields its most pristine diving. Only three dive operators regularly service East End, so on a typical day, there may be four dive boats anchored along the 16 miles of coastline while West End will be dotted with 30 or 40 boats.

Some believe East End offers the best wall diving on the island. The open-ocean currents (and trade winds) that coax most divers to the sheltered West End sites also keep the coral healthy, the formations more dramatic and the pelagic life more plentiful. Sharks, eagle rays and sea turtles are more likely on East End.

The walls start as shallow as 37 feet, and most dives average 70 feet, which matches well with the maximum allowable dive depth of 110 feet in Cayman. Visibility is usually about 100 feet, and if it drops below 80 feet, it's unusual, Fitzgerald said.

The open ocean keeps sediment down but also makes for choppy boat rides. Fitzgerald said it's a myth East End is always rough, and during the past year, there have only been three or four days his boats weren't able to run. A barrier reef on the windward side creates a protected sound, giving boats smooth cruising to more than 60 named dive sites.

The walls on the southeast side of the island are extremely sheer and also extremely lush. Dramatic canyons, swim-throughs and pinnacles are the foundation of Cayman's early popularity and rapid rise to diving prominence. Divers can still cruise through canyons, dotted with brain, star and pillar coral, that empty out on the sheer walls.

Pat's Wall on the southeast corner of Grand Cayman is

one of the best wall dives on the island. Babylon is another exceptional wall dive that even attracts a few west-side operators.

Divers who venture to the east side typically are more experienced and have dived the Caymans before, but there are mini-walls and ledges at depths of 20 to 30 feet with canyons and swim-throughs that dump at about 50 feet for divers who aren't looking for deep dives. Snapper Hole is one of the best shallow dives on the island, Fitzgerald said.

Although not as far off the beaten track as they once were, Little Cayman and Cayman Brac, Grand Cayman's sister islands, still offer an easy out for divers looking to escape the crowds. Fewer than half a dozen operators service either of the smaller islands.

Some of the best and largely unexplored sites on Little Cayman are overlooked by dive boats headed toward the more popular Bloody Bay Marine Park.

J.D. Sailor, director of dive operations for Reef Divers I, said a couple of times a year he'll take divers to spectacular deep wall sites on the south side of Little Cayman even though his boats cruise over them almost daily on the way to Bloody Bay Wall.

Although most visitors want to dive the Bloody Bay Wall, where the vertical drop starts at 18 to 40 feet, the south side wall starts at 50 to 75 feet and offers stunning coral formations teeming with macro life. The deeper sites on the windward side are closer, but anyone who enters the water late or comes back too soon can be in for an uncomfortable ride topside, where the swells can be huge.

"A lot of days on the south side it's very beautiful," Sailor said, "with visibility over 100 feet and relatively calm seas."

The windward side offers ravines and tunnels through the wall and diverse marine life. Sailor said regulars on deeper wall dives include eels, large groupers, turtles, eagle rays, nurse sharks, Caribbean reef sharks and hammerheads.

"Just about everything you could imagine," he said.

For divers who want an even more virgin experience, the Cayman Islands Department of Environment has opened eight new sites on the northeast end of the island, Sailor said.

"Those are almost totally unexplored," he said. "The only people who have seen them [work for] the Department of Environment, basically."

Further east, Cayman Brac offers more spectacular wall diving.

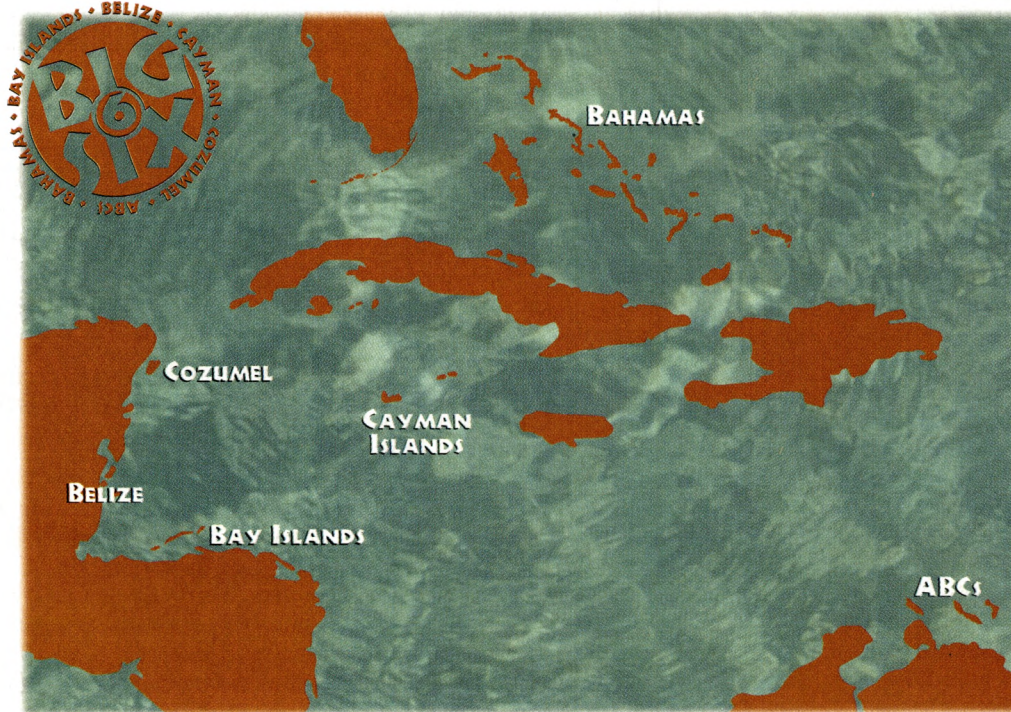
Brett Lemaster, dive master for Reef Divers II, said East Chute on the north side of the island is one of his favorite sites. The sand chute starts just below the top of the reef at about 60 feet and flows out over the wall, which plummets to over 2000 feet.

On the south side of the island, the walls are a little deeper and drop "off to oblivion," Lemaster said.

He said one of his favorite south-side sites was recently rediscovered. Its mooring had been missing for a couple of years and was replaced last year just before he began diving the north side extensively, so it hasn't been touched recently.

"The tunnels are great," he said.

"You can go through at the top of the





Cozumel's strong currents cause this anemone to sway like a branch in the wind.

© Patsy Archer

wall, and they'll spit you out at 100 feet."

Marine life, including southern stingrays, turtles and giant bubble anemones, also is abundant in the tunnels and cracks and around the chimneys.

Average visibility is about 80 feet, but in the winter, visibility can top 100 feet, Lemaster said.

Although diving Cayman Brac isn't really tricky, it's best done from a boat since the iron beaches limit shore diving.

Shallow dives close to shore are possible, though, and there's plenty of marine life to keep divers entertained when the seas are too rough for boats to get out.

What draws people to Cayman Brac as much as the diving is its quiet atmosphere.

"You don't get the hustle and bustle of Grand Cayman at all," Lemaster said.

COZUMEL

The island of Cozumel offers some extraordinary diving off the beaten path, as long as Mother Nature cooperates.

Barracuda Reef is among the sites reserved for more adventurous divers. The reef can't be dived every day and the conditions are rough, even in good weather. The current usually runs two to three knots and varies like the swells topside. The unpredictable nature of the sea makes the dive more challenging, but it can also make it more dangerous. A tourist made a trip from Cozumel to Florida in two days when the engine on his personal watercraft stalled in strong current. Sometimes the current pushes you along the wall and sometimes away from the wall. Still, the diving is worth the effort.

Due to the strong current, very little soft coral adorns the wall. Barracuda Reef is mostly hard coral and visited by large schools of fish, turtles, and occasionally sharks. There's also plenty of smaller life

to keep photographers busy.

Diving the east (or windward) side of Cozumel also draws less interest from tourists due to the open ocean conditions. The big rollers keep a moored boat moving all the time, and since most storms blow in from the east, divers are more likely to be thwarted by bad weather on that side.

The sites on the east side are best reached in big, fast boats to cut surface time and roll. Some sites are easily dived by novice divers, but many require more technical skills. The reefs on the east side don't grow parallel to the shore as they do on the western side of the island. Instead, the reefs form fingers perpendicular to the island, and the formations slope downward instead of dropping vertically. Divers have a better chance of seeing sharks and other large marine life on the east side due to the open ocean conditions.

Few visitors are aware that Cozumel is home to several mostly unexplored caves. Unlike their mainland Yucatan counterparts (see below), Cozumel's caves are deeper and require serious technical ability. The cenotes on the island offer access to the caves, but many are remote and can require some jungle travel. Luckily, a few cenotes are within close reach of Cozumel's tourist areas. Although the caves presumably form an extensive system underneath the island, they have yet to be linked to one another. For years, Cozumel's caves have gone unnoticed to the thousands of divers visiting the reefs. With the recent publicity surrounding ancient Mayan artifacts found in one of

the caves, tourists may begin to take notice of Cozumel's other dive sites.

The Yucatan mainland is only a short ferry ride from Cozumel and offers truly unique cave and cavern diving. Divers, from the novice to the technical, can enjoy the Yucatan's cenotes and caves. Some, like the Temple of Doom, are best explored by serious cave divers. Others, such as Dos Ojos, appeal to the more technically-challenged divers. Here, divers on cavern tours never lose sight of the surface. In addition, the clear, calm waters appeal to almost any diver who has spent a few days being hurled past Cozumel's reefs by the strong currents.

ABCs

To dive off the beaten path in the Netherlands Antilles, face the wind and get ready for a rough ride.

A local guide also is a necessity, said Ivan Enjlintina, who works at Peter Hughes/Princess Dive Facility in Curaçao. Diving on the windward side of Aruba, Bonaire and Curaçao is something most island visitors stay away from. Heavy seas, rough boat rides and dangerous currents keep most novices away from the northeast sides of the islands.

While conditions on the surface are less attractive, there's plenty of spectacular scenery and marine life underwater to make the trip worth considering.

Enjlintina said only experienced divers should try to tackle the sites on the north side of Aruba, Curaçao and Bonaire. Potential 15-foot swells, unpredictable undertows and currents make it inadvisable for anyone else to try to dive the reefs.

Even experienced divers need to have local guides to lead them safely in and out of the pristine sites of all three islands.

While Enjlintina said Princess Dive Facility and other local operators don't take divers to the windward side of the islands, there are local divers capable of guiding small groups to the best sites.

He also said at certain times of the year — right before and right after the hurricane sea-

son, which lasts from September to November — the sea on the north side of the islands can turn flat. During those times, even less-experienced divers can leave the shelter of the southeast and southwest sides of the islands to explore the reefs and walls on the windward side.

Diving on the northeast side of Curaçao is always challenging and a thrill,

Few visitors are aware that Cozumel is home to several unexplored caves.

Enjlentina said. The reefs are untouched and large pelagics still cruise the reefs. Divers can swim with large groupers and manta rays on reef dives that range from 40 to 120 feet deep.

Diving below 130 feet is difficult on the north side, but also unnecessary, Enjlentina said. Most of the reefs descend to only 140 or 150 feet, where they end at a flat sand pocket.

Enjlentina said that most of the top sites on the north side of Aruba, Curaçao and Bonaire are still unnamed.

"Right behind the [Bonaire] airport is good, but again, you need to have an escort to go there because it's tricky getting in and out," he said.

On Curaçao, there are sites on the windward side even the local dive masters haven't been to yet, but a diver who takes the time to find a qualified, capable local guide who knows the island can be rewarded with some of the most spectacular and infrequently visited diving found in the ABCs.

According to Guillermo Carrillo, Cabes is a great off-beat dive site in Aruba. The site is located on the southeast end of the island but is usually not dived by mainstream operators. They do a land entry which Guillermo describes as a very rough entry due to the rocky coast line and the rough seas. The currents run in a variety of directions because of the large waves crashing onto the shore. The depth ranges from 40 feet to 80 feet which allows you to view large brain corals, barrel sponges and sea fans. There are even caves located at 60 feet which are home to nurse sharks up to 12-feet long. Guillermo warns that only trained cave divers with the proper gear should enter the caves. The occasional manta and eagle ray as well as numerous turtles and barracudas are seen around Cabes. Exiting the dive is even more dangerous than entering and requires climbing onto large rocks with the threat of large waves.

BAY ISLANDS

Utila, the closest of the Bay Islands to the Honduran mainland, is smaller and less developed than the country's diving mainstay, Roatan. Utila is accessible only by boat or via a dirt airstrip. Since there is little development and less entertainment, there's not much to do — except dive.

"Of the three Bay Islands, Utila is the undiscovered one," Cathy Bryant said.

Cathy and her husband, Kenny, own and operate one of three dive resorts on Utila. The oldest of the three resorts is only in its fourth year.

Cathy said she first dived the island about nine years ago, but she knew it

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would be the “new frontier” of Western Hemisphere diving.

The island is the first island off the coast of Honduras — only 18 miles offshore — and the last island on the Continental Shelf. It’s surrounded by seamounts and dramatic walls.

The unique geography makes Utila a favorite hangout for whale sharks, Cathy said. The huge animals frequent the walls on the north side of the island, but other large fish aren’t as plentiful because fishing is still allowed around Utila and larger fish disappear when divers hit the water.

Airport Caves is a popular cavern dive located, you guessed it, just offshore from the airstrip.

Black Hills, a seamount off the eastern tip of the island, and Willie’s Hole are good wall dives, and for shore diving, there’s the Front Porch Reef. A forest of black coral called the Black Coral Wall juts out from the Front Porch Reef, and bluebell tunicates and a variety of anemones and small fish make for unbeatable macro photography.

Blackish Point is another of Cathy’s favorite sites. The north side reef offers plenty to see at 30 feet, and, at about 90 feet, overhangs offer shelter for huge reef grouper, snapper and moray eel.

Visibility on the north side of the

island is generally around 100 feet, and most of the dive sites are 10 to 45 minutes from the resorts.

The reefs are still undamaged by development or careless divers, Cathy said, and the dive operators try to educate their guests to help keep it that way.

She said the island’s inhabitants are laid back and the whole place seems to be about 50 years behind the times.

“I hope it stays that way,” she said.

Another of the less-visited regions of the Bay Islands is Cayos Cochinos, a cluster of islands just nine miles from the mainland. The steep volcanic walls that rise out of the Caribbean to form this cluster also provide exceptional diving.

Doc Radawski, who has been diving the Bay Islands since the early ’70s, said he is planning to start taking advanced divers to Cayos Cochinos sometime this year. Although plans are still in the works, Radawski said he would like to put together a nitrox mixing facility and shuttle divers to some of the places that aren’t easily accessible.

One of his destinations is a series of seamounts between Cochinos and Trujillo, but diving this area of open water depends on the weather.

“I’ve been out there some days and it’s very benign and some days the current’s

running five knots,” Radawski said.

In that kind of current, if you miss a handhold on the tag line coming up, your next stop is Nicaragua, he said.

These seamounts have also been added to the itinerary of some of the Bay Island’s liveaboards, such as the *Bay Island’s Aggressor* and *Peter Hughes’ Wind Dancer*.

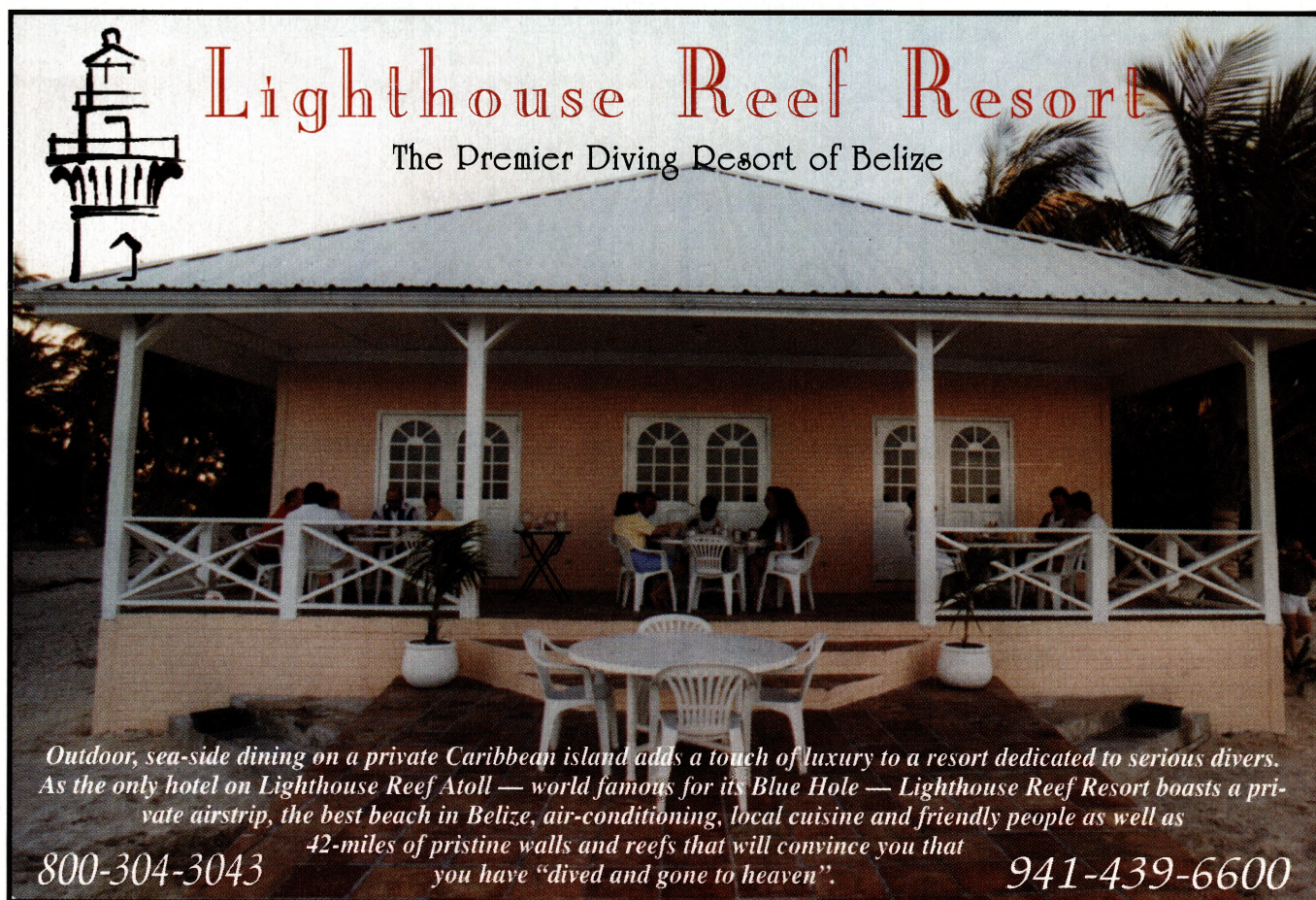
Without much recognition at all, the fourth and virtually forgotten Bay Island is Barbareta, located off the eastern tip of Roatan. This, the smallest of the Bay Islands, is privately owned and has one small dive resort. The resort has a supply of dive gear and a compressor, along with basic accommodations and offers pristine diving without contact with the outside world — especially since most Roatan dive resorts are located towards the western part of the island.

Because of its private status, an old growth forest remains on Barbareta and is a favorite spot for non-diving activity.

BELIZE

Getting away from it all in Belize can mean finding crowds of marine life or discovering civilization of an ancient variety.

While much of the diving in Belize is concentrated on the barrier reef off the mainland coast, three atolls — Turneffe,



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Hugh Parkey, who managed the Turneffe Island Lodge for five years and now operates a dive shop in Belize City, said Turneffe Atoll's sites give divers a chance to swim with blue marlin, whale sharks, large schools of black snapper and dog snapper and eagle rays. More than 200 islands dot the atoll, each covered with mangroves that produce tremendous amounts of nutrients, and also act as a nursery for smaller fish. Encounters with spotted dolphins are fairly common, and Parkey said he dove amid a pod of orcas on the east side of the atoll.

While diving with big fish is always a hit-or-miss proposition, Parkey said the odds of finding large marine life off Turneffe are good and any dive will yield 60 to 70 different identifiable species of reef fish.

There are more than 70 dive sites mapped with GPS coordinates on Turneffe, and the diversity of islands and barrier reefs means there's somewhere sheltered to dive regardless of the weather. Diving is consistently best on the east, southeast, southwest and northwest sides of the atoll, and when visibility allows, sites on the west side are excellent, too. Strong currents and large swells keep most divers away from the north side of the atoll.

The atoll offers a variety of terrain. Walls drop from the east and southeast side, starting at 55 to 65 feet. Sheer Delight off Calabash Cay and Tunnels and Barrels are good wall dives.

The other reef formation prevalent at Turneffe is spur and groove, and while many of the grooves are narrow and tight, one of his favorite sites is The Elbow on the southeast side of the atoll, where the spurs resemble huge loaves of bread placed side by side and the grooves can be as wide as 100 feet across. The reef tops start at 65 to 75 feet, and the grooves bottom out at 95 to 100 feet. Following the grooves to the end of the atoll, the formation makes an abrupt turn to the northwest, and just a few hundred yards off the wall, the sea floor is 3000 feet below.

Pelagics commonly cruise the wall. Parkey said he has encountered blue marlin there three times and has seen schools of permit more than 1000 strong.

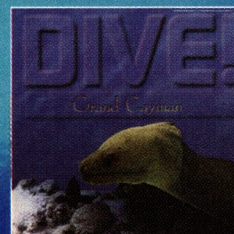
The site is best reserved for advanced divers when conditions are stout. Currents five to six knots strong can make the drift-dive quick, and every once in awhile, down currents along the wall make it hard to hold depth.

"Your trade-off at Turneffe will be visibility," he said. The mangroves generate

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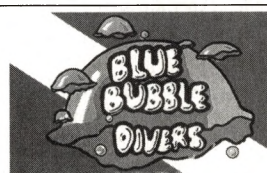
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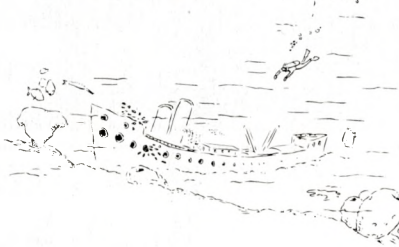
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lots of particulate matter, and while it's good eating for fish, it can cut cross-water visibility to 60 or 70 feet. Vertical visibility can range from 150 to 200 feet.

Further east is Lighthouse Reef, home to the famous Blue Hole, a 450-foot-deep hole ringed by a coral reef, and Half Moon Caye. Half Moon Caye offers wall diving starting at 40 feet topped by a sandy slope. The wall itself is about 30 feet across and is a sheer drop to several thousand feet. Grooves in the wall form narrow channels with sheer reef on both sides. Mountainous star coral and black deep-water gorgonians are among the species growing at this 1.5 mile stretch of wall.

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unspoiled diving anywhere in Belize.**

Andrew Stockbridge, manager of Lighthouse Reef Resort, said the reef is regarded as a premier dive spot largely due to the Blue Hole and Half Moon Caye as well as Long Caye. Long Caye, which is at the south end of the system has a shallow reef at 20 to 25 feet, which ends in a sheer drop into the abyss, plummeting 2000 to 3000 feet. Half Moon Caye has a sandy bottom that runs off to about 50 feet before the reef climbs to about 35 feet. The other side of the reef is the abyss. Both Half Moon and Long Caye offer spectacular sheer wall diving, but Half Moon also is dotted with tunnels and swim-throughs that offer divers something different. On the north end of the reef, where the resort is located, a two-step reef surrounds the system. The reef starts at 30 to 40 feet and drops to a sandy bottom at about 110 feet. That's where a second reef starts, plummeting into the deep Caribbean. Stockbridge said encounters with eagle rays, turtles and blacktip reef sharks are common, but despite all it has to offer, Lighthouse is still a good way to escape the underwater crowds. He said there is very little traffic at the reef, and even at its most crowded, there won't be more than half a dozen boats on the reef at one time.

Divers willing to make the 72-mile crossing from Belize City to Glover's Reef can find some of the most unspoiled diving anywhere in Belize. Mike Finestein, who owns Manta Resort at Glover's said demand for sheer-wall diving isn't too high because most dive boats stop at Turneffe or Lighthouse rather than continuing across the sea. Finestein said while the operators may save fuel, the divers miss diving that is "a cut above the rest." Although Finestein has the only resort at Glover's Reef, he also has resorts

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at Turneffe and Blackbird Cay and has dived throughout Belize. Glover's is the youngest atoll in Belize and tends to attract lots of big pelagic marine life, including lots of turtles. The north end of the system drops in a sheer wall which begins in about 30 feet of water with most of the diving above 110 feet.

In southern Belize offshore from Placencia, is an extensive system of islands with more than 40 GPS-mapped sites and covering about 400 square miles of reef and bottom, offering excellent diving off the beaten path. Wade Bevier, who handles dive operations for Rum Point Inn, said the size of the area means there's terrain for any diver at any level.

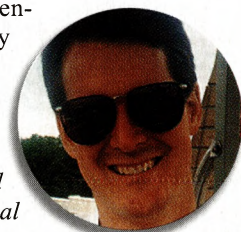
Laughing Bird Cay, a Belizean national park, was also recognized in December as a World Heritage Site, along with the Belize Barrier Reef. The 16-square-mile park, which encompasses an atoll that is about 60 to 70 feet deep at its center and includes a small island at its southeast corner, offers sheltered diving regardless of the weather, Bevier said.

The Silk Cays, islands at one of the entrances to the barrier reefs, and Ranguana Cay offer nice deep diving along canyons and walls. The sheer walls at the Silk Cays drop to about 1500 feet. At Ranguana the wall slopes downward to about 200 feet before dropping off dramatically to more than 1000 feet.

He said diving in both areas and throughout Placencia offers a good mix of hard and soft coral and a diversity of fish that gives divers a chance to see an average of 70 to 80 species per dive. In May and June, whale sharks also can be sighted along the wall.

While the diving is among the best in the world, Belize also offers visitors a chance to get off the beaten path and out of the water. Cockscomb Basin Wildlife Sanctuary is a popular day-trip for visitors, and there also are kayaking and biking trips available for people who want to explore Mayan ruins in the North or the rain forest but don't necessarily want to go on a guided tour. Jungle resorts dot the interior, and cavers can find as much adventure inland as they can offshore. ▀

David King is a former newspaper publisher and current professional writer living in Brewton, Alabama with his wife and two children. He first visited the Caribbean in the late 1970s where he lived on coconuts and diving in Roatan, Honduras.



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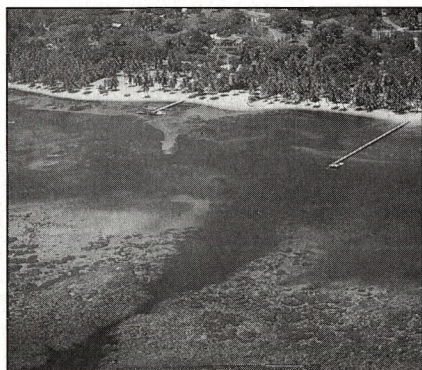
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Fifty-five feet below the surface, we slipped through a hole in the bottom of the ocean. As we drifted down the column of blue light from the opening, three large sharks swam out of the darkness to join us. We were in an unexplored giant coral cavern. Huge stalactites hung from its ceiling. Below us, our lights illuminated a sand-debris cone sloping downward into the depths.

We were diving Belize, but this was not the Blue Hole. It was pitch black, and the cavern's walls were too distant for our dive lights. We were diving into something no one had ever explored in depth.

ICE AGE DIVING IN TROPICAL BELIZE

Submerged Evidence of Prehistoric Humans

TEXT AND PHOTOGRAPHY BY BOB BURGESS

I first heard about this site months ago but had been unable to dive it. Five of us had chartered a boat and for a week were diving the off-the-beaten track areas of the Belize southern barrier reef. Foul weather forced us into South Water Cay where Blue Marlin Lodge is located. That night, Colorado-born divemaster Denny Nelson mentioned that they had recently found a hole in the bottom of the ocean that led down into what once had been a dry cavern. No one knew how big the place was, but everyone knew sharks and occasionally giant jewfish stayed there. There was no marker on the site, and the entrance was "no bigger than three billiard tables," as Denny described it. Inside, you descended a shaft of blue light joined by sharks and surrounded by columns of stone stalactites. When Denny described what he thought he saw on the bottom at over 100 feet down, I was anxious to photograph what he had found. It seemed to be evidence of human habitation. But since the cavern probably hadn't been dry for at least 10,000 years, that last inhabitant may have been Ice Age Man. Denny said they were purposely keeping the sunken cavern's location a secret to prevent it being over run by curious divers. No one had yet explored it to any extent, but Denny occasionally took in divers with at least cavern-diver certification.

Unfortunately, our trip was ending, and we were pressed for time. Best I could do was get Denny to agree to take me there if and when I could get back to this remote dive resort the following year.

Back in Belize, I checked on a way of getting to South Water Cay. It involved a small inter-island airline and native boatmen to reach the island. After that, it was another long boat ride to the hidden location of the entrance far below the sea's surface.

I sought a more interesting way of getting there. Before leaving Belize, I met Mike and Donna Hill of Fort Collins, Colorado. They charter-sail their 45-foot catamaran *Stingray* out of Belize City. They agreed to sail me there when I returned. The following spring, *Stingray* picked me up, and with sunny skies and all sails straining, we sailed south through the protected waters of hundreds of tiny, uninhabited tropical islands that dot the southern barrier reef. Our destination was the southernmost dive facility on this barrier reef, the Blue Marlin Lodge.

Our dive was set for the next morning and would include Denny, myself and his Belizean boat captain. Since the site was several miles to the north, in the middle of nowhere,

we used one of the resort's fast, open boats made for covering water at high speed.

After skimming a few miles through the islands, the boat captain suddenly throttled back, we drifted to a stop and he indicated we were over the site. There



The *Stingray*.

were no markers. Just open water. The only sight of land was two islands smudging the distant horizon.

"Are you sure this is the spot?" Denny asked his boat captain.

The man broke into a broad grin. "Yes, sir," he said. "This is it." He set the anchor confidently. Until then, all I had noticed were his eyes occasionally shifting to take in the distant islands on the horizon. Could he have possibly ranged us in that tightly to a hole on the bottom of the ocean no bigger than three billiard tables? It seemed impossible. From the surface, we saw only dark water, but in 55 feet of water, what can you see of the bottom anyway? Moreover, the water looked murky. Not exactly the kind of viz you wanted for pinpointing a dive target.

But we need not have worried. On the bottom, 55 feet below our boat, our guide had put us within five fin strokes of the hole. It was as Denny had described it, ringed by rocks, a black opening in the bottom the size of three billiard tables.

Denny switches on his hand light and eases down through the hole first. I follow

with camera and strobe. Behind me comes the boat captain.

First thing I notice is the instant chill of the place. A thermocline knifes through my diveskins. Some difference from the 85 degree water outside the entrance.

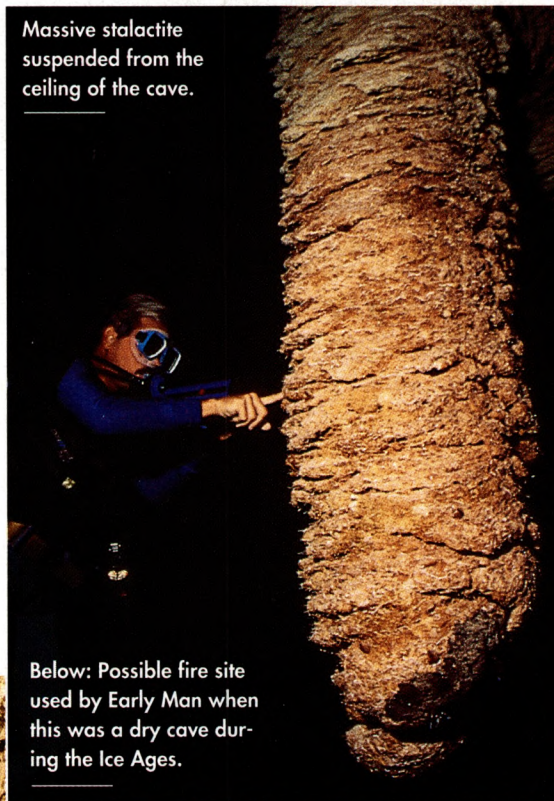
I roll over and look up toward the hole in the ceiling. We're in a dim blue celestial spotlight. I snap a photo of the boat captain above me framed in the roof-top opening. Then large broad-headed brown nurse sharks curiously slip out of the gloom and undulate their way around us. Denny had told me the last time he was there he was joined by a 200-pound jewfish. No sign of him.

Below me, Denny motions with his light. He moves horizontally. I follow him to a wide, vertical column of rippled brown stone. He runs his light up it. We never see its top. It's a massive stalactite suspended from the ceiling. With our dive lights, we spot

others. I motion Denny to stay where he is for a photo of him beside the tip of this dry-cave formation. Then we head down into the darkness.

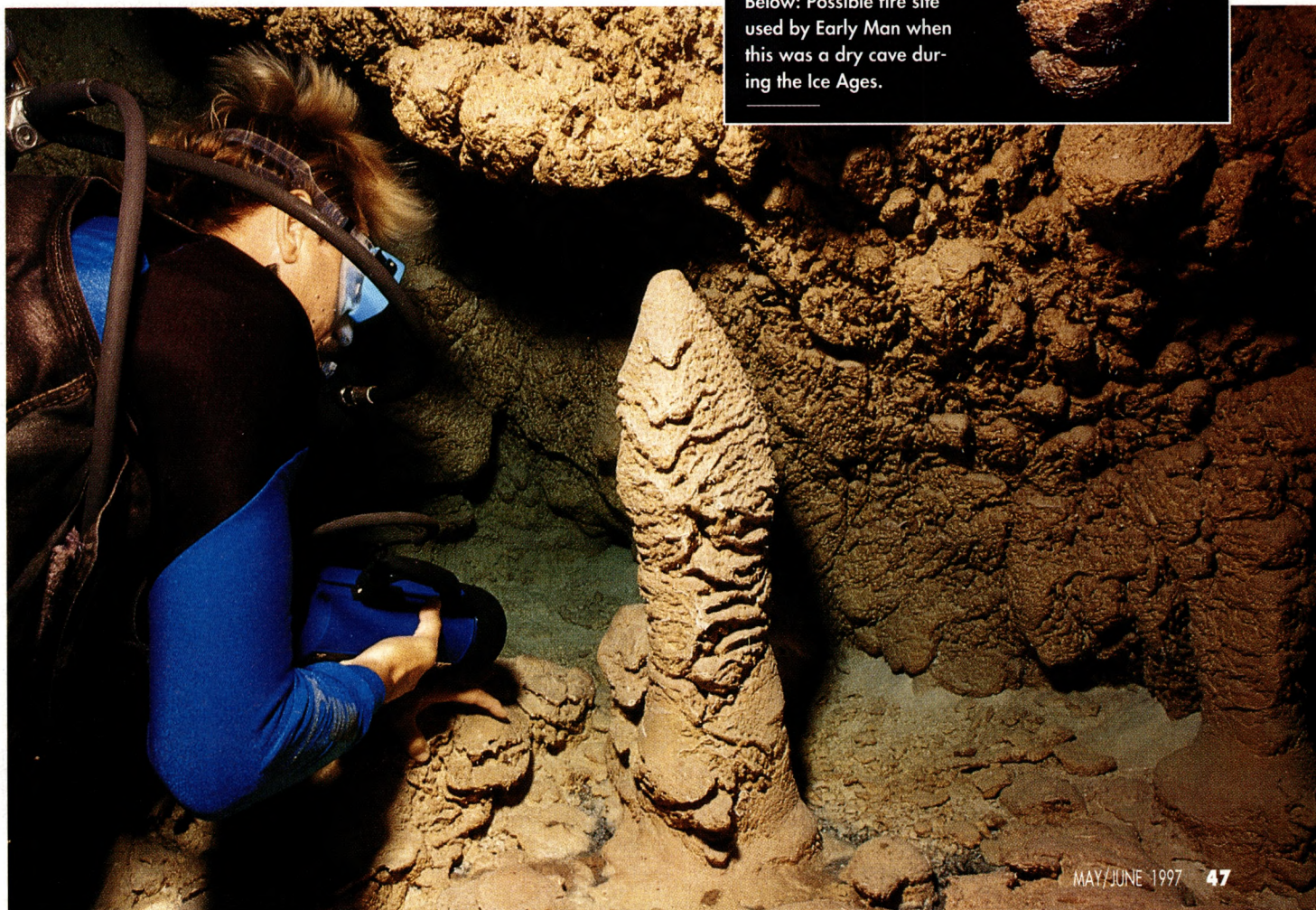
After a stretch of inky black water, the sand debris cone appears. We hover above it, our fins up and careful, then ease down its sloping side with Denny leading the way. The sharks have undulated into the darkness. The water is crystal

Massive stalactite suspended from the ceiling of the cave.



Below: Possible fire site used by Early Man when this was a dry cave during the Ice Ages.

...this might have been a fire site used by Early Man when this was a dry cave during the Ice Ages.



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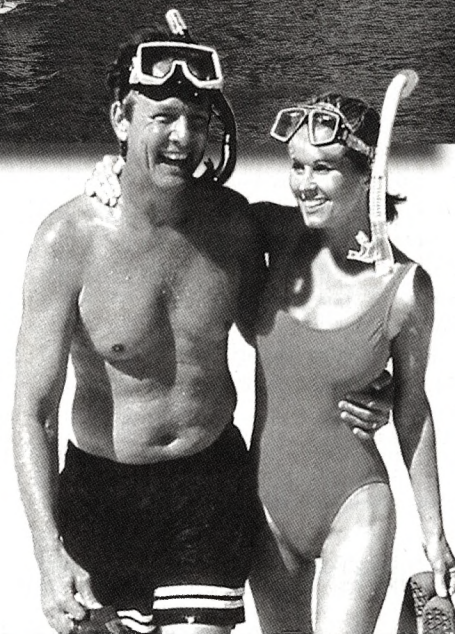
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clear, but our lights fail to find an opposite wall. The cavern could be over 100 feet wide, but no one has been down there long enough to find out.

Our lights find bottom just below us. I glance at my computer. It reads 115 feet. Denny is near the side where the rock wall rises. He fixes his light on something he wants me to see. I ease over to him. His light shines on a small stalagmite about two feet tall. A counterpart to one of the drip stones hanging from the ceiling, formations that can only form in a dry cavern. On the bottom near it is something that appears to be black charcoal. This is what Denny wanted me to see. The area is well under the cavern roof 60 feet over our heads, which suggests that if it is charcoal, this might have been a fire site used by early man when this was a dry cave during the Ice Ages. Scientists believe that during those times, so much of the earth's water was frozen that oceans were 300 to 600 feet lower than they are today. Early man lived in caves. When glaciers finally melted, these sites were flooded and have remained so for at least the last 10,000 years.

Is this a 10,000-year-old fire pit? Tempting though it is, I don't touch the material to see if it is charcoal. We carefully avoid disturbing the site. Denny signals for us to start up, following the vertical wall of the cavern.

As we draw closer to our entry point, Denny's light sweeps across the backs of two large brown nurse sharks lying on rock ledges along the wall. Startled by our presence, one shark moves off deeper into the darkness while the other turns and swims past me.

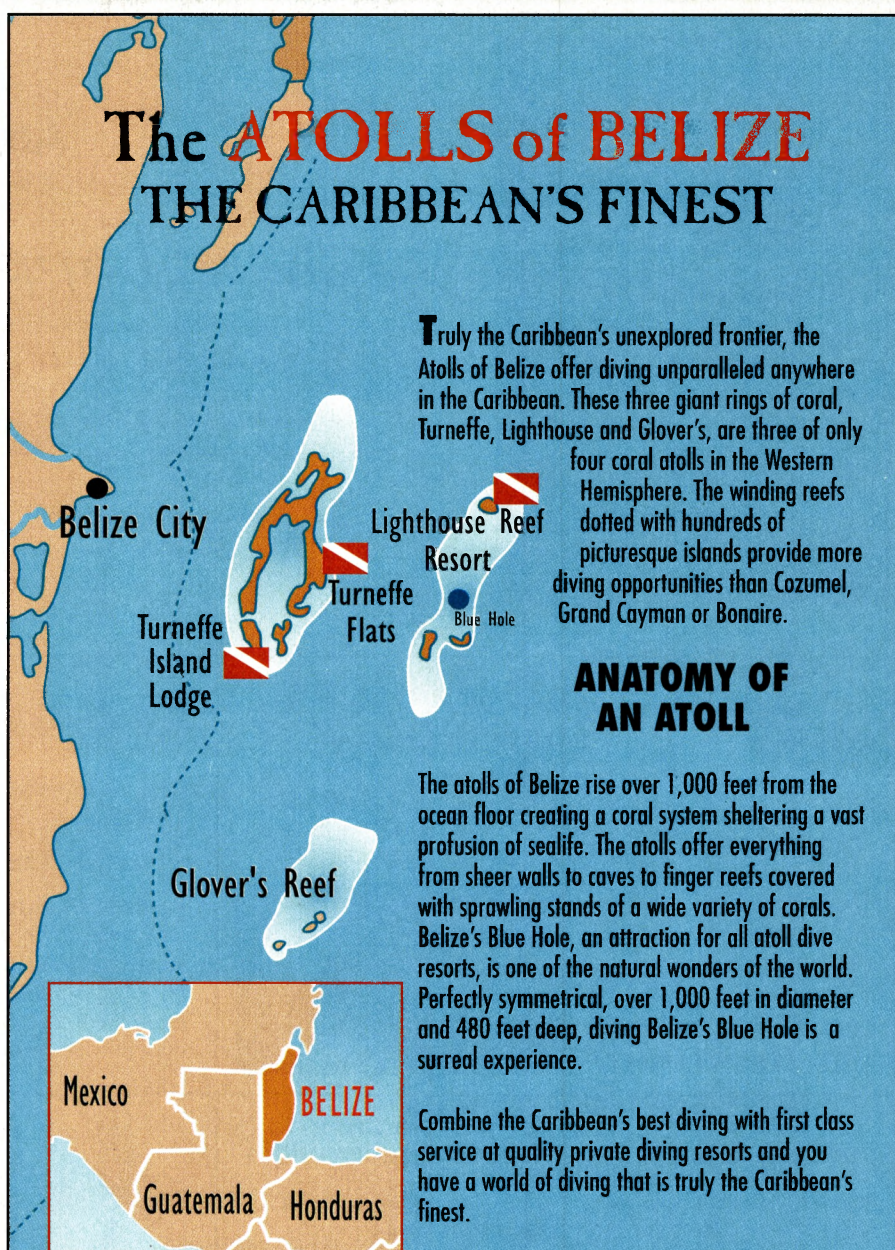
Shortly after that, Denny gives us the thumbs up, and we ease through the rooftop opening into the welcome warm water below our boat.

In the days that followed, Stingray sailed us leisurely back up the chain of barrier islands, stopping daily to dive and explore interesting islands. I had found the perfect way to explore these off-the-beaten-track dive sites. But sailing back to reality was bittersweet. ▀

Special thanks to Mike and Donna Hill at Fanta-Sea Charters (303) 226-1193 and Blue Marlin Lodge.

Bob Burgess is the author of many dive books including Diving Off the Beaten Track, an Aqua Quest Publications guidebook to little known but unusually fine diving areas of the Caribbean and Bahamas. For more information about this book, call (800)-933-8989.

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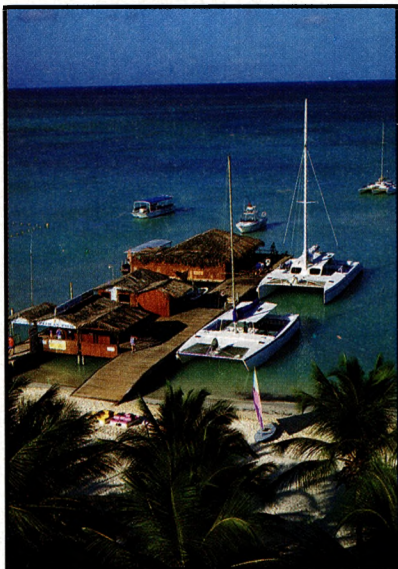
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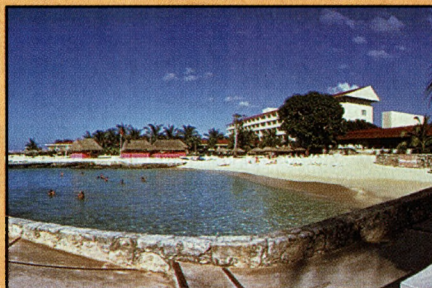
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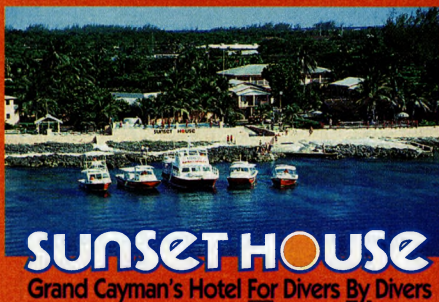
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54 Portfolio: Digital Imaging **56** Filming Squid **58** Expectant Wolf Eels **60** Photo Q&A **62** Using Zoom Lenses **64** North Sulawesi

Killer whales pass through this kelp at the north end of Steep Island every summer as they cruise through Discovery Passage in British Columbia. Too shy for photographers, this orca was actually captured on film over 100 miles away in the tank at the Vancouver Aquarium. Both shots were taken many years ago with a Canon F-1 and 15mm full-frame fisheye lens and recently merged digitally using photo manipulation software into one dramatic image by photographer David Fleetham.



Digital Imaging

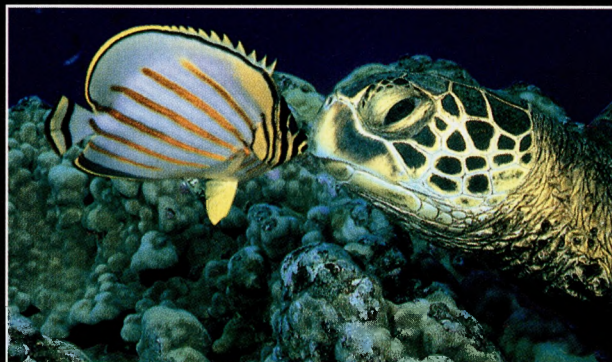
MAKING THE MOST OF A PHOTOGRAPH

TEXT AND PHOTOGRAPHY BY DAVID FLEETHAM

I cannot count the number of times I have seen the “perfect photograph” while looking through my camera’s viewfinder and then not been able to capture it on film. The light was wrong, I had no model, the sea was too rough, the strobes would not fire, the marine life did not feel like cooperating with me that day. The list is utterly endless. Underwater photography is the least forgiving environment for recording images onto film. But for quite some time now, the new digital technology has increased the possibility of creating pictures or improving on old ones.

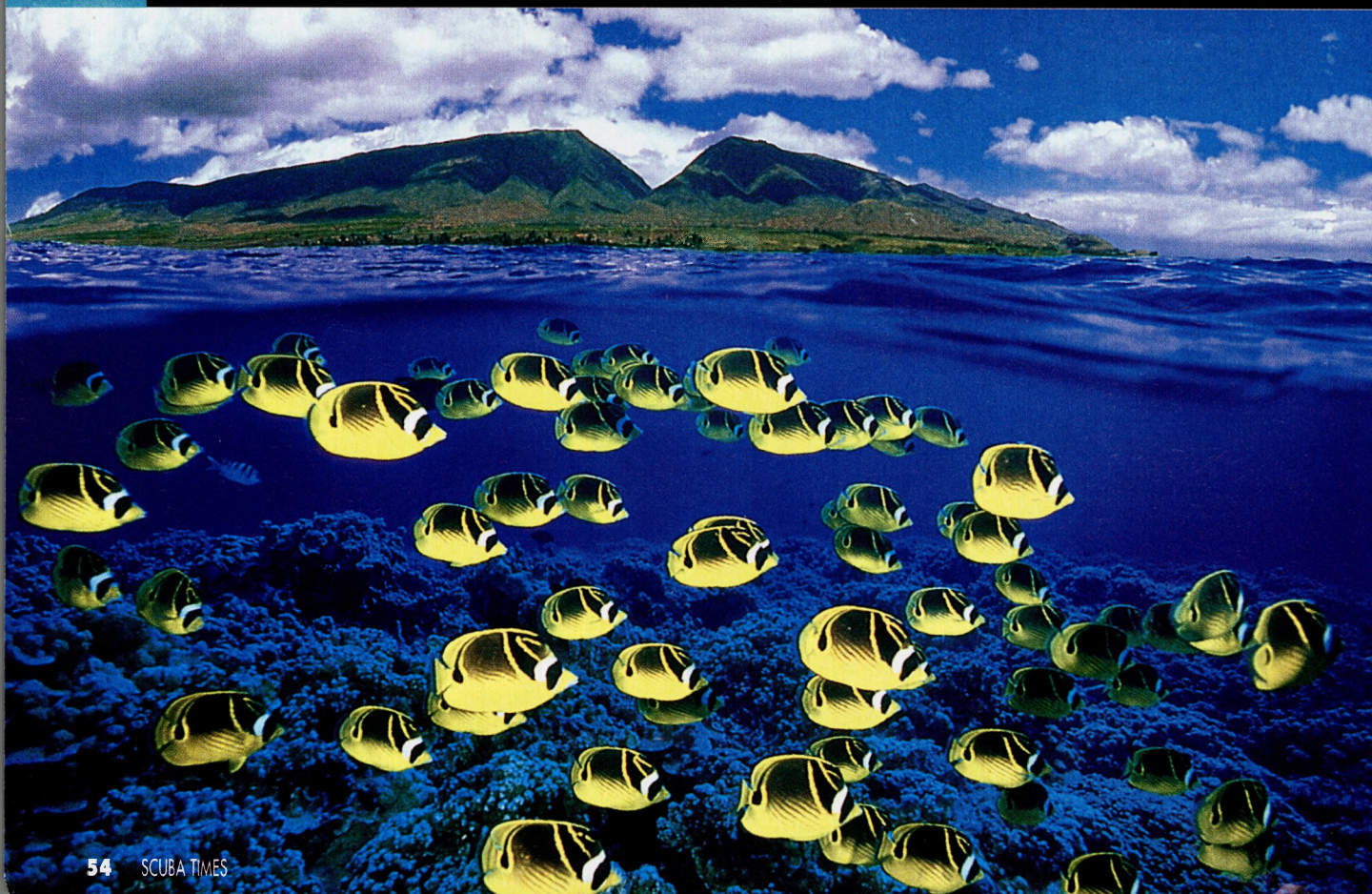
There are a variety of methods for getting your images into your computer. Film scanners have come down to the \$1000 range, and for those not interested in such an investment, your images can be digitized onto a Kodak Photo CD, for a few dollars each, which is the method used for the images you see here.

Once in the computer, the Photo CD format offers a number of choices in resolution depending on what your final output will be. I worked with the largest of the resolutions which is just under a 20 megabyte file size. All



of the images represent two or more separate photographs that were combined using Adobe Photoshop to produce the final product. The work was done on a Power Macintosh computer with 72 megs of RAM. Combining images in layers meant working with a single file which would at times exceed 140 megs.

As my Photoshop instructor put it “the only limitation with this program is your imagination.” I’ll add one



but to that — you have to have good images to start with before you can generate a final product.

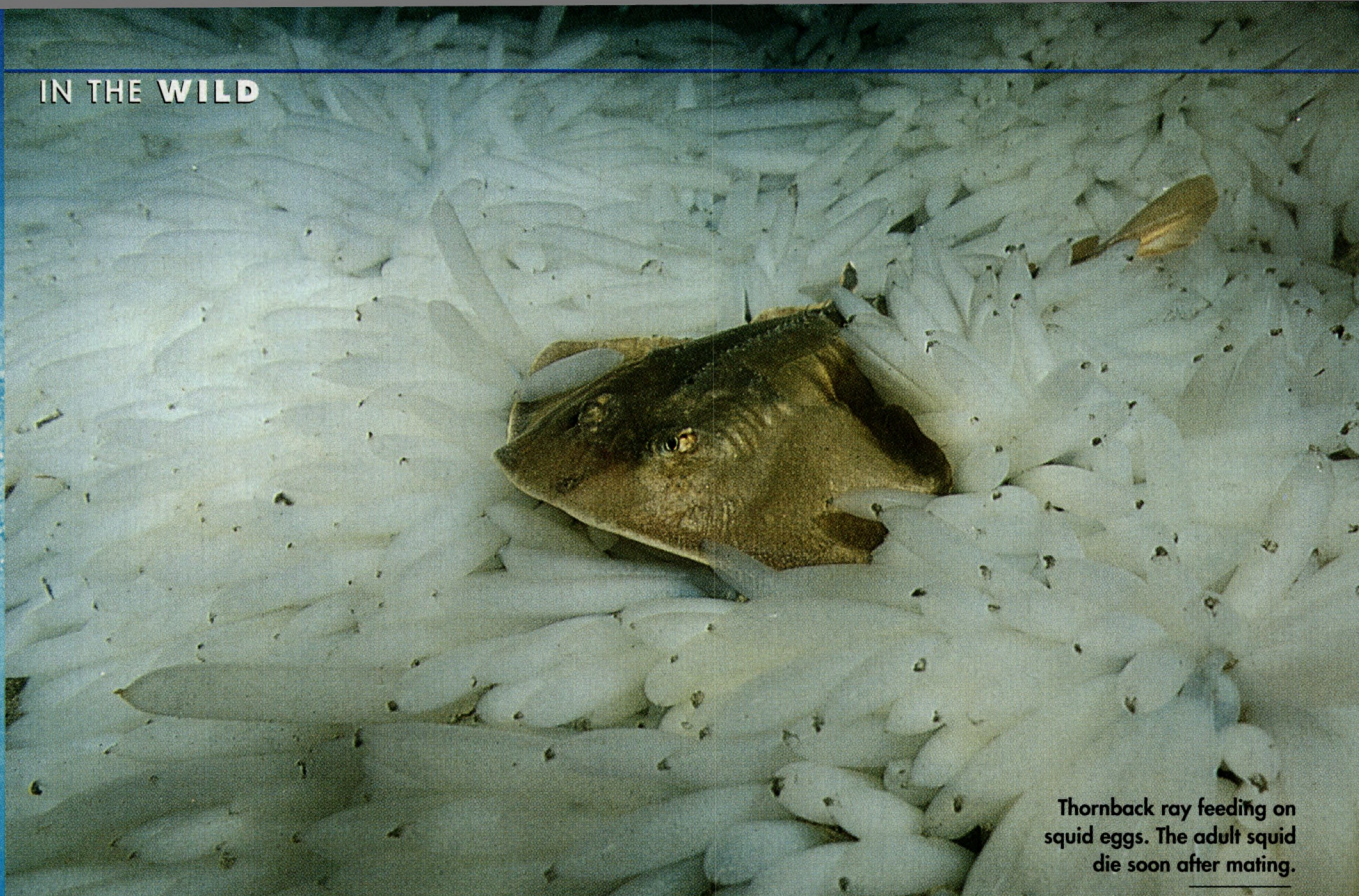
On the cover image, a diver was removed from the original photo of the British Columbia kelp forest and the orca was added. The photo of the diver and leafy sea dragon (right), is two photos merged into one. The ornate butterflyfish was added to the original image of the green sea turtle (left). The half-above / half-below shots were originally photographed with a full-frame fisheye lens held right at the surface in an Aquatica housing. The focus and exposure were set for the surface image of the west Maui mountains, and the bottom half of the picture was added later in the computer.

Contrast, brightness, lighting direction, sharpness, backscatter and shadows were all adjusted to varying degrees in each of the images. The files were then run through a film recorder which produced 35mm transparencies to bring the process full circle and back to film.

There is, and probably will always be, a puritanical debate between photographers as to what is “right” to do and what is considered improper. It is a debate for another article. When I watch dinosaurs chasing Laura Dern through the jungle, I think to myself — well, at least what I do is based on reality. ▀

David Fleetham is a marine photojournalist living on Maui, whose images are published around the world. His underwater photos have graced the covers of many publications, including Life magazine. Email photo@maui.net





Thornback ray feeding on squid eggs. The adult squid die soon after mating.

White Christmas

THE TRADITIONAL SQUIDLY FEAST

TEXT AND PHOTOGRAPHY BY MARTY SNYDERMAN



When I was a kid growing up in Little Rock, Arkansas, the Christmas season meant cold weather and the possibility of snow. The hope of a white Christmas made us check out the weather forecast the week before Christmas a little closer than we did most weeks. Three or four times in my childhood, we had some snow, at least enough to make a lot of Christmas carols more meaningful.

For the past 20 years or so, I have lived in San Diego, and Christmas in southern California is a very different experience. As much as I have tried to get into the spirit of the season, things just don't feel the same when it's 75 and sunny for the 10th day in a row. I know better than to complain about it, but I do wonder what is going on in the minds of the local kids when they sing about sleigh rides and snow. There aren't too many "Santa hangs ten" Christmas carols that I am aware of.

But this year, things were different in southern California. Despite being all bundled up on Christmas Eve, I was aware of the cold. My surroundings were totally silent, and it was white for as far as I could see in every direction. This was a white Christmas if ever there was one.

Well, yes there was a catch. Bundled up meant in my drysuit, and the cold came from the mid-50s water temperature. The white was not snow, ice or anything close. It was squid eggs. The sandy sea floor of the La Jolla Submarine

Canyon was almost totally obscured by a shag carpet of snow white egg casings. Each 10-inch-long casing contained approximately 200 eggs.

For the gang I have dived with in San Diego for the past 20 years, checking out the squid "run," a natural phenomena in which the squid mate, lay eggs, die and get devoured, is as much of a December tradition as sending out Christmas cards. Our dives and get togethers help me get into the spirit of the season.

This year the tradition was a little different for me than it has been in past years. That's because Rocky Strong and I needed to film a sequence about the squid and any sharks and rays their presence attracts for the television special we are co-producing for the PBS series *Nature*. Common, or market squid, *Loligo opalescens*, are a keystone species, playing a vital role in the food chains of myriad species including blue sharks, pilot whales, sea lions, harbor seals, dolphins and a host of open-sea fishes. The squid are believed to live for one year, mate and die. When they die, they are scavenged upon by bat rays, round stingrays, angel sharks, horn sharks, sculpin, rockfish, lobster and many other species. Interestingly, for the most part the egg casings are left alone, being protected by a distasteful protein.

Most of the mating occurs at night, a fact which presents a bit of a problem to a film crew. Squid are attracted to lights. The problem from our perspective was that as soon

as we turned our movie lights on in the water, we became engulfed in a sea of squid. The lights are like a magnet. No matter what we did, we couldn't get out of the squid. Swim as far as you want as fast as you want, but you are not going to out-swim a single squid in an ever-growing gathering of thousands.

It's ridiculous and would be laughable if we didn't have a job to do. That's the Catch 22. We wouldn't have been diving if it weren't for the squid, but since we had a job to do, we found the numbers of squid to be extremely frustrating. At times, I couldn't shoot film because I couldn't see through the dense gathering of squid to frame a shot. In fact, a lot of times I couldn't even see the sea floor even though I knew I was hovering just above it. I couldn't see my assistant Mark Thurlow either, but because we were using our MK 155 closed-circuit rebreathers, I could hear him laughing. It beats crying, and besides, he gets paid no matter whether Rocky and I are getting our brains beat in or not.

What made things difficult to accept was that the mix of animals attracted to the squid feast is a little different every year, and while this year we had not seen any sharks, we had seen a lot of thornback rays, round stingrays and bat rays. We needed to film these rays in the squid eggs to make our ray sequences stronger. And here we were surrounded by three species of rays while we were engulfed in squid, but things were "too good," and we couldn't shoot film. Ah, wildlife film making.

The first time Mark and I tried to film a few nights earlier, things were going just as I had hoped for. We had a lot of rays in the squid eggs and reasonably clear water. I raised my camera to my eye, and then the movie lights blew up. Unbelievable. Mark was too kind to laugh out loud, but even if he had, I wouldn't have heard him. I was too busy grinding my teeth and chewing on my mouthpiece.

If this had been a topside shoot, we would have simply changed a lamp in a matter of minutes and been back on the job. But underwater is a bit different. The lamps hadn't just burned out. They exploded. Salt water got into everything. We had to ascend, make a safety stop, get into a frame of mind that would enable me to deal with life and then see what we could do to make repairs.

What we could do is what we did. Up anchor and call it a \$750 night. But this business teaches you by beating you up one side and down the other on a continual basis that you just can't give in to the temptation to throw up your hands and quit. So the next night, there we were again. Anchored on site as the sun sank into the Pacific. Our weather was holding, and we had another crack at the rays. As soon as we got underwater, we found some stingrays in the eggs, and I began to film. A few minutes later, the lights blew up. I did not feel like a glass of Christmas cheer. I felt like I wanted to down the whole damn bottle.

But I reminded myself that we were professionals. No quit in us, and tonight I had brought spares. We changed lampheads, and within an hour, we were back at it. Two minutes later, a lamp blew up. I pretended not to hear the smothered giggling noises coming from Mark's direction. Call it a \$1,000 night. Home again and nobody better be singing any #@&%!-ing Christmas carols.

But in this profession, you just can't quit. So we used the next day to repair the lights and my attitude. I didn't bother to look at my checkbook. I didn't need to. I saw the numbers all night long

when I tried to sleep. Producers always do.

The amazing thing is that I have used this design of light for several years without a single problem. So have filmmakers Howard Hall and Bob Cranston. None of us could figure out what was happening. The thing I learned is that there are just some things in life that will forever remain a mystery. Why me?

The following day, the boat engine wouldn't crank. It wouldn't even make a sound. I looked at Mark with a look that said anything but Merry Xmas. He pretended to have to use the head, but I could hear him laughing as he walked away. If laughing beats crying, I can assure you the gap was narrowing.

The next day it rained, and the day after it was Christmas Eve. Conditions were good, and you never know how long they will hold or how long a squid run will last. It could go on for months, or it could be ending. In the underwater filming business, we know we need to film 'em while the filming is good. But it was Christmas Eve, and I didn't have the nerve to ask Mark if he would work. I was afraid he'd just laugh.

But when Mark called and asked me if I wanted to go to work on Christmas Eve, I didn't even hesitate. I started packing before I hung up the phone. We launched the boat at two o'clock in the afternoon and were on site for one afternoon dive and three night dives.

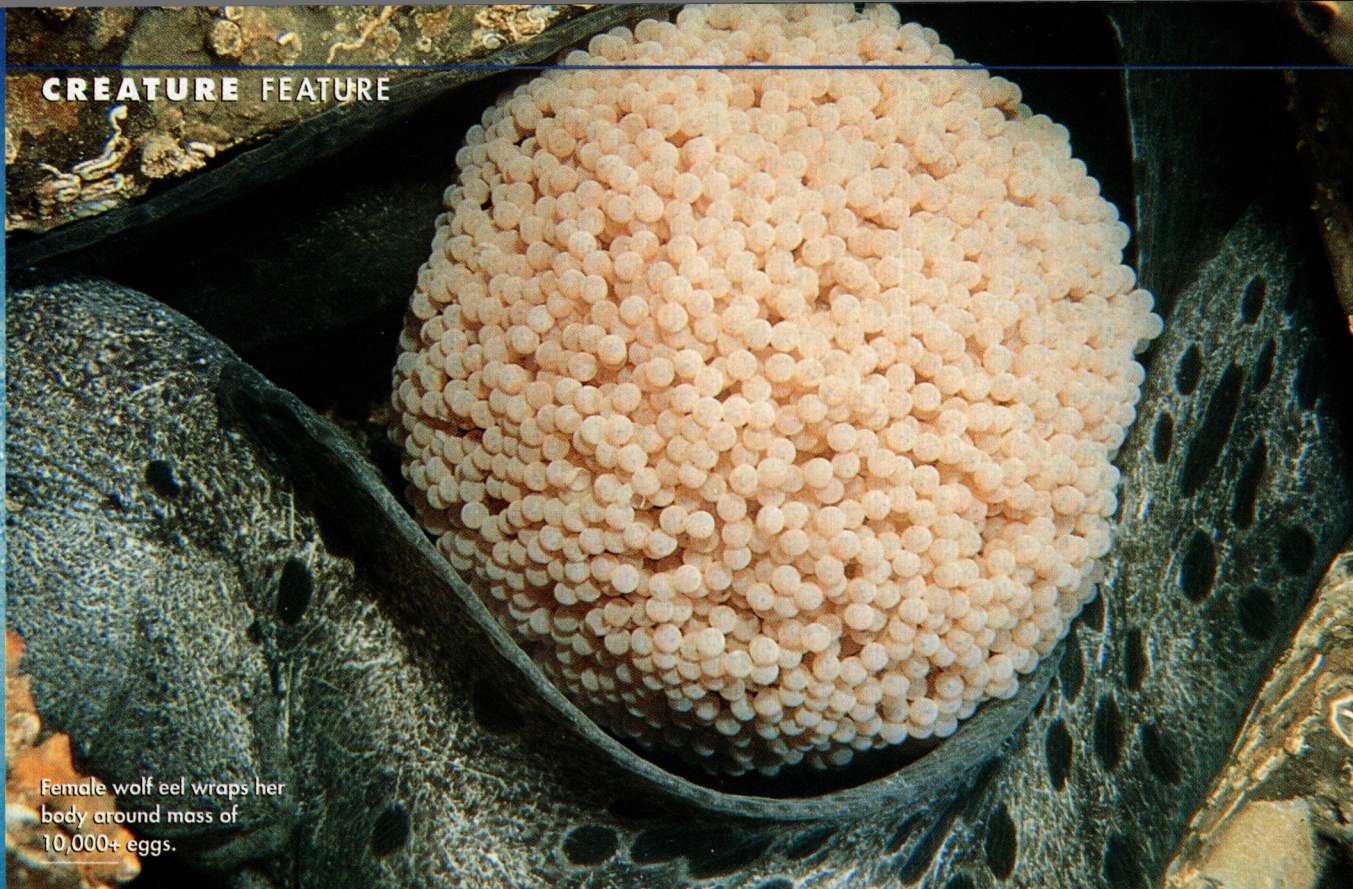
On our second night dive, the concentration of squid was not as dense, and I had the opportunity to film a bat ray nestled in the eggs and got a number of takes of thornback rays and round stingrays. We might have as much as 90 seconds of the final film. It is indeed a season of miracles!

We got out of the water around 11:00 p.m. and looked up into the bright Christmas lights on shore. I was finally feeling Christmasy all over, just like I always do when its cold outside and white for as far as I can see. ■

Author of Guide to Marine Life: Caribbean - Bahamas - Florida, STM contributing editor Marty Snyderman enjoys calamari in their natural habitat rather than deep-fried.



Common market squid mate over egg casings on sea floor



Female wolf eel wraps her body around mass of 10,000+ eggs.

My Expectant Friends

THE WOLF EELS

TEXT BY MELISSA S. COLE • PHOTOGRAPHY BY BRANDON COLE



The wind tears at my drysuit with frosty fingers, nipping at my cheeks with icy teeth. Nothing can keep me from plunging into British Columbia's frigid "Emerald Sea," however, for deep beneath me live two of my dearest friends, the wolf eels.

Many a time I have visited these strange, fleshy-jowled beasts in their rocky abode off Breakwater Island near the city of Nanaimo. Far below the waves, they have flown curiously from their den to greet me, undulating through the cool green water like mythical dragons. They have wrapped their tails lovingly around me, begging to be stroked or fed an urchin snack. Their Muppet-like faces, permanently contorted into toothy grins, have always made me feel like part of the family.

Wolf eels are not true eels (order Anguilliformes), but rather wolffish (family Anarhichadidae) in the order Perciformes. They can live up to perhaps 30 years or more, growing to over eight feet long. Though juvenile wolf eels live a solitary existence, they eventually mate for life, residing in rocky dens (down to 750 feet deep) which the territorial males guard ferociously from each other. Powerful jaws and canine teeth help them to subsist on a crunchy diet of crabs, mollusks, sea urchins and the like. Wolf eels range along the West Coast from Alaska through Northern California, while a closely related cousin wolffish is found

in the North Atlantic Ocean. As wolf eels frequently live in the same den for many years, divers have a chance to visit them regularly. Subsequently, many of these endearing creatures have grown accustomed to human contact.

Getting back to my buddies — where are they? I can't find them anywhere! What did I do to spurn their affections? Where



Mr. & Mrs. Curmudgeon wolf eels guard egg mass.

is the warm wolf eel welcome I've always taken for granted?

Friendless, I reach their craggy domain at 90 feet and peer gingerly inside. Usually cheerful jaws now gnash at me in warning. Both eels are tightly wrapped around a glistening mass of pearly pink eggs. Although I had read about this long ago, I never expected to see this rare spectacle firsthand! Judging from the tiny dark eyes staring at me through the translucent eggs, my friends are about to become parents any day now.

In late October females usually lay their free-floating ball of nearly 10,000 eggs which the male then fertilizes.

In late October females usually lay their free-floating ball of nearly 10,000 eggs which the male then fertilizes. Both fish guard these eggs from friend or foe until they hatch 13-16 weeks later as tiny one-inch babies. Once born, there is no parental care. The wriggling wolflings cloaked in brilliant orange and purple polka dots have to swim away, finding their own crevices to avoid being voraciously vacuumed up by a hungry cabezon or other large reef resident. As they mature, they adopt the charcoal gray and black skins of adults. Females are usually smaller, darker and quite svelte, whereas males don't seem to age as gracefully. Their faces are large and pale, rippling with flabby triple chins, their teeth protruding at odd angles. Some people think they resemble an overweight bulldog who's just run into a brick wall.

Out of time for such contemplation, I smile at the wolf eels and wriggle my glove in farewell as they stare up at me, patiently remaining furred about their precious brood. Perhaps on my next visit to the den, I'll be greeted by even more of my wolf eel friends, but for now, I peel myself away and make the long journey back up to that other world and the icy, wicked wind. ■

Brandon and Melissa Cole are frequent contributors to Scuba Times and reside in their new home in Spokane, WA.

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Photo Q&A

FUZZY PHOTOS/STILLS FROM VIDEO

TEXT BY SCOTT FRIER



Scott Frier is a *Scuba Times* Contributing Editor and technical representative for Nikon



Question

The pictures that we took with our underwater camera in St. Thomas and Aruba came out very fuzzy. The camera is an Ansco disk camera in an Ikelite housing. We didn't use a flash because it was very sunny. My sister's camera, which only goes down to 12 feet, took very clear pictures. I don't understand.

Please help. Thank you!

*Ben LaLone
Via Internet*

Answer

A lot of things conspired against you, any one of which could have caused fuzzy pictures. Probably the biggest problem was depth. As light passes through water, it is absorbed very rapidly. Three times faster than it is absorbed when it passes through air. Even though it was very sunny, if you went much below 20 feet, the light level probably was low enough to require the camera's exposure system to either completely open the lens' aperture or slow the shutter to its slowest speed. Opening the lens reduces the depth of field which is the amount of the photograph that is in acceptable focus from the foreground to the background. Slowing the shutter speed can also cause fuzziness due to motion of the camera or the subject. The neutral buoyancy we experience in water causes us to be in some kind of motion almost constantly. The motion can be either our own movement or movement caused by the water. It creates a much greater opportunity for image blurring. Your sister was limited to less than 12 feet of depth and with the bright sun, her camera was probably working with a higher shutter speed and/or a lens that was closed further down. The faster shutter speed would help stop blurring due to motion, and the small lens aperture would increase the depth of field, putting more area in focus. Both would result in sharper pictures.

Not using flash was still another problem. As light passes though water, color is also absorbed out. All white light is made up of the seven colors of the spectrum. This includes sunlight or the light of a photoflash. At five feet of depth, the red portion of the spectrum starts to disappear, and by 30 feet, only blue is left. This holds true even in bright tropical sunlight. This loss of color causes the photograph to look very blue, creating a lack of contrast. This can increase the appearance of fuzziness.

Both the film and the camera you used also added to the problem. Most disk cameras have a relatively low-quality lens. When you put this behind the plastic of the housing and then shoot through water, you're pretty much guaranteed to have unsharp photos. Disk or 110 film produces a very small negative, considerably smaller than even 35mm film.

When the film is printed, it has to be enlarged much more than most film formats. This really emphasizes any fuzziness that may be caused by the water or the lens.

In the future, I would use a flash. If it's a small flash or the built-in type, stay very shallow (less than ten feet) to get some additional help from the sun. Get close to your subject, within three or four feet. If you really want good pictures, you will need a camera system designed for underwater use. This can get expensive, especially if you're only an occasional diver. You might consider renting the equipment when you need it. Spend the money. Your pictures are worth it.

Question

I am currently shooting video underwater with a housed Sony video camera. I would also like some still photographs. I have seen devices that will allow you take an image off the video and convert it to a photograph. How does this type of system work, and what kind of quality can I expect from these type of pictures?

*David Grannis
Via Internet*

Answer

The device you are thinking about is called a frame grabber, and there are several of them on the market. They connect between your video camera and your computer and allow you to "grab" and "digitize" a video image so it can be imported into the computer. The digital image can then be manipulated and finally printed. This sounds like a pretty slick system, but there are some major drawbacks to consider.

First, the image quality leaves a lot to be desired. Compared to film, video images are of a much lower quality. The image from your video camera is probably 640 x 480 pixels. This produces a fraction of the resolution of 35mm film. By comparison, a professional quality, dedicated still-image digital camera captures an image more than double this size. Even with this larger, higher-resolution file, it is difficult to produce a high-quality print much past 8x10. With the video system, you will, at best, be able to produce mediocre snap-shot size images (3 1/2 x 4 1/2).

However, these type of images work fine on home pages within the Internet. In fact, many of the images on *Scuba Times Online* are video captures. Check them out!

In addition, you need to consider the computer. To work with photos, even these small file sizes, requires some computer muscle. At the very least, you'll need a 486 (Windows) or 040 (Mac) processor, 16 megabytes of RAM, and a 250 megabyte hard drive. Depending on what operating system you use, even these minimums may not be enough.

Photos from your video camera sound like a dream come

true, giving you the ability to do two forms of photography at once. To a very limited extent, it's true, but as the old saying goes, you can't have your cake and eat it too . . . at least not yet.

Question:

Will airport X-ray machines really hurt my film?

Ernie Grant
Apalachicola, FL

Answer:

Yes! Signs on many airport X-ray machines claim that films below 1000 will not be harmed but this is only partially true. Research by independent labs has shown that X-rays affect all film! The effect is more evident, however, in higher speeds films. Also keep in mind that X-rays are cumulative and when you travel you may pass your film through more than one X-ray machine when you change planes or return home with unprocessed film.

X-rays affect all film!

Don't attempt to stick your film in your luggage to avoid the X-rays. Many airlines also X-ray baggage and they use an even higher dose of X-rays on luggage, making the effect on your film even worse.

Most photography stores carry X-ray proof bags for transporting film. These work for carry-on baggage but don't use them in your luggage. The higher dose machines can penetrate some bags making it useless and if the X-ray cannot penetrate it you may have a big problem with security. They are going to wonder what that black mass in your suitcase is. If you use the X-ray proof bag at carry-on security check you will most likely have to open the bag and empty the contents.

The best thing to do is carry your film in clear plastic bags in your hand luggage. This way you merely have to lift the entire bag out of your luggage and the security people can easily inspect it without having to open the bag and take the film out. If you have a lot of film and need to save space take the film out of the cardboard boxes but leave it in the plastic containers. When traveling through an airport in the U.S. don't let security personnel tell you must put your film through the X-ray machine. The law clearly states that you have a right to have your luggage hand inspected. ■

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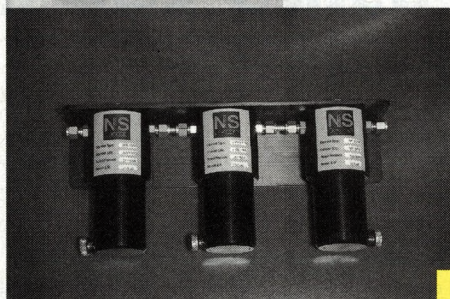
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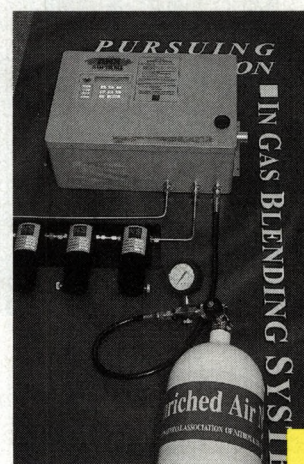
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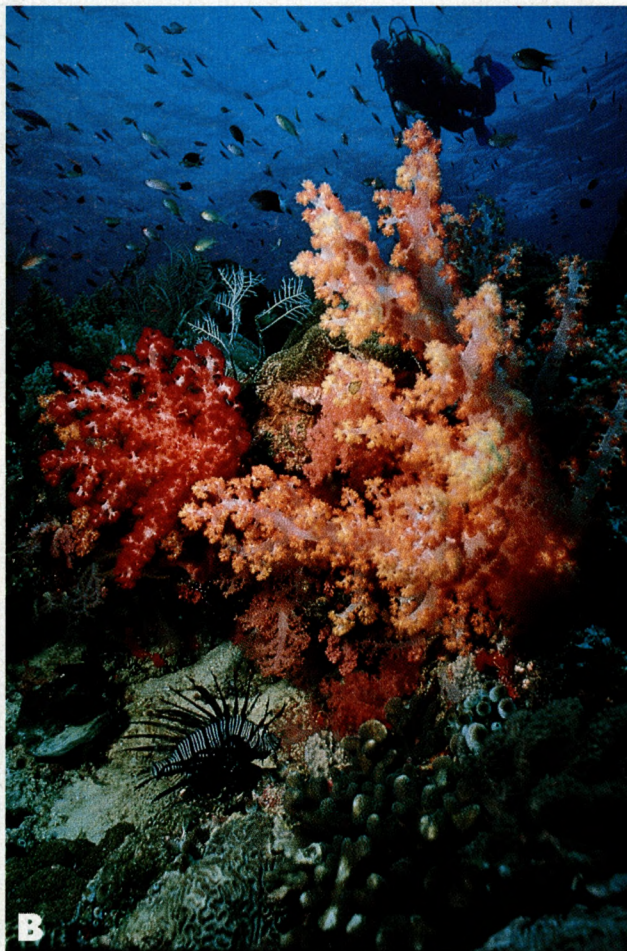
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Up Close and Personal USING ZOOM LENSES

TEXT AND PHOTOGRAPHY BY NORBERT WU



Housed Cameras

Housed systems give you the advantage of seeing exactly what you shoot although they are bulky and require more maintenance and tinkering when setting up. With them I can use all of my lenses underwater, ranging from a 16mm full-frame fisheye, 18mm, 20mm and even a 24-50mm zoom lens. As shown above, I took advantage of my zoom lens for two distinctly different shots, without changing position or cameras.

Image A — *Lionfish and soft corals, Sipadan Island, Borneo.* Nikon F4 in Aquatica housing, Nikon 24-50mm zoom lens with Nikon 6T close-up diopter, Ikelite Ai strobe on half power, SR2000 slave, Kodachrome 64, 1/60 second, f/5.6. By zooming in close on the lionfish, I was able to create a different composition than Image B. This photograph was taken with the lens zoomed to its narrowest focal length, 50mm.

Image B — *Lionfish, diver and soft corals, Sipadan Island, Borneo.* Nikon F4 in Aquatica housing, Nikon 24-50mm zoom lens with Nikon 6T close-up diopter, Ikelite Ai strobe on half power. SR2000 slave, Kodachrome 64, 1/60 second, f/5.6. Being able to use a zoom lens underwater is a great boon. I was able to photograph this lionfish up close among the soft corals and then make this composition as well by zooming the lens to a wider angle. Because the autofocus capability of the camera takes care of focus, the gear formerly used for focusing the lens can be used as a zoom control instead. This photograph was taken at the widest setting of the lens, 24mm.

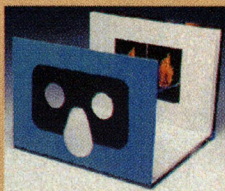
Norbert Wu regularly leads natural history and photography expeditions to the planet's finest diving. His photographs have been widely published in books and magazines worldwide. He is a contributing editor to Scuba Times.

BOOK REVIEW

Beneath the Sea in 3-D

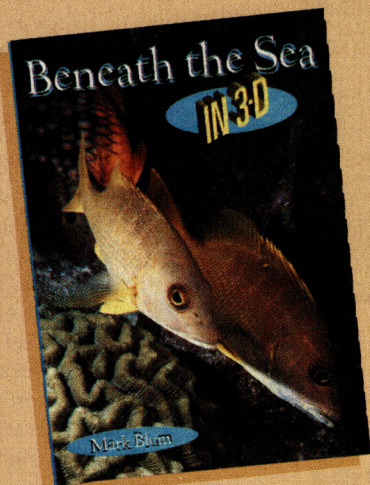
by Mark Blum — Chronicle Books 1997

If you have ever spent hours in conversation with non-divers, only to fail to describe the intricate beauty



of the underwater world, then a new collection of photos by Mark Blum, presented in an innovative way, will help. *Beneath the Sea in 3-D* is a unique collection of stereophotographs.

No more stuttering and hand waving while you try to explain how it feels to see a grouper swim toward you with its mouth wide open looking for dinner. Just turn to one of the more than 40 3-D photos and have them look through the special lenses that are bound into the back cover of the book.



The stereophotographs are shot with a single camera using two lenses simultaneously. This provides two images taken from two different perspectives. These images are then placed side-by-side and when seen through the 3-D lenses, the brain combines both pictures into one very realistic image that really jumps out at you.

The effect is amazing, bringing out details and characteristics of sea life that go unnoticed in regular photos. With this collection at your side, your non-diving friends will certainly become your newest dive buddies.

Mark Blum has hauled his camera equipment to the Caribbean, Thailand, Malaysia, Indonesia and Fiji to create award-winning images. When not diving, he resides in Pacific Grove on Monterey Bay, California. His book is available for \$18.95 through Chronicle Books (800) 722-6657.

— Daryl Carson

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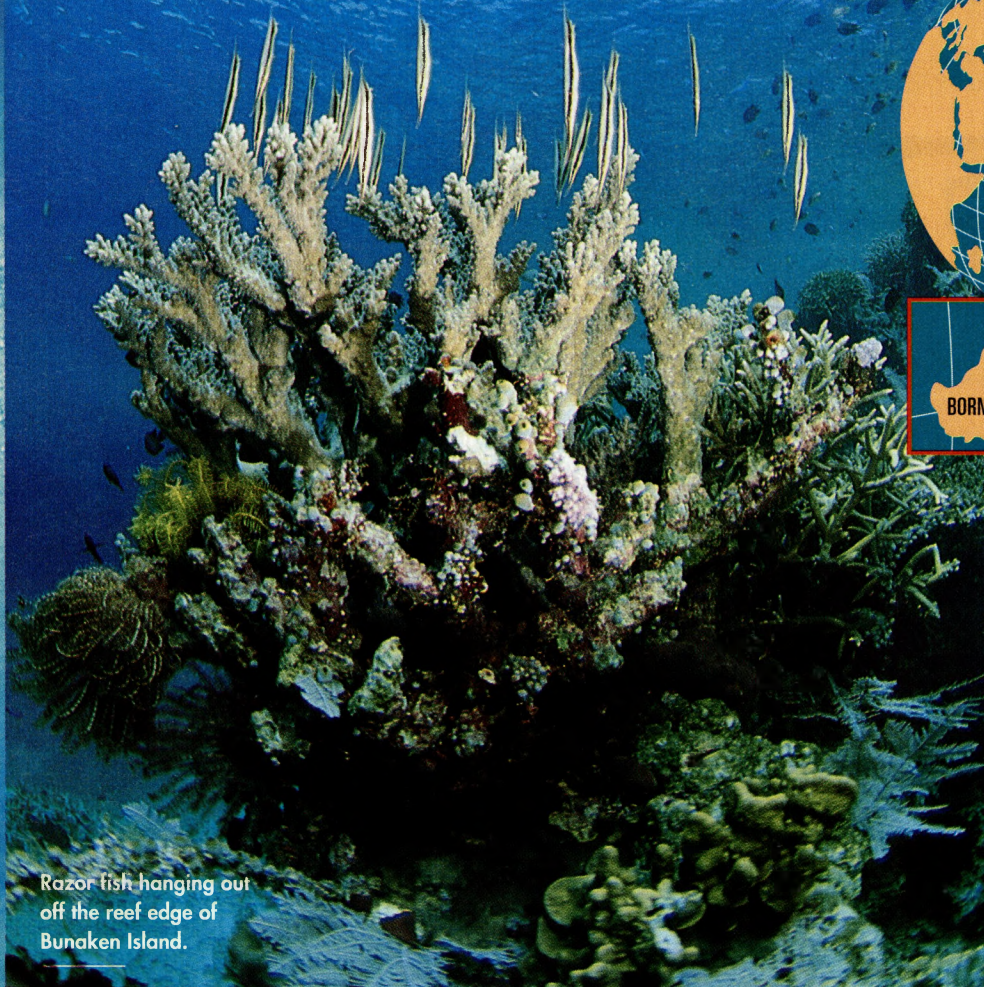
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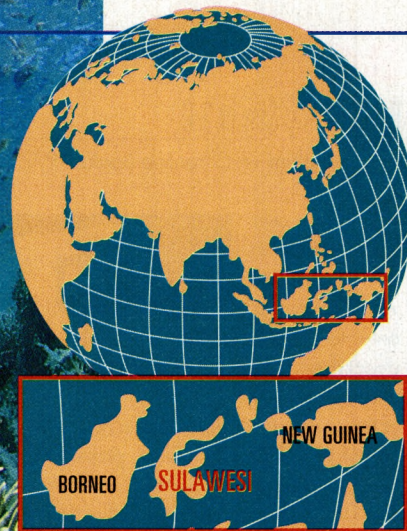
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LAST WATERING HOLE



Razor fish hanging out off the reef edge of Bunaken Island.



The Marine Epicenter

DISCOVERING NORTH SULAWESI

TEXT AND PHOTOGRAPHY BY MICHAEL AW



The dinosaur made a thunderous exit. Wave after wave of tsunamic magnitude whooshed these mighty animals into a well of extinction. A series of earth-shattering collisions with Sundaland and Gondwanaland evolved a land mass of the weirdest oddity. An entomologist would describe it as a demented spider, a botanist might say it's shaped like a Singapore orchid and to the common folks, it's that wobbly "K" or "H" shaped island.

One of the most geologically complex regions in the world with 18 volcanos — 11 still active — North Sulawesi is for curious divers with a quest for adventure. Sandwiched between Borneo and New Guinea, Sulawesi offers those who wish to be among the first to explore new frontiers, new coral and fish species. The geographical crossroad of transcontinental currents of the Indian and Pacific Oceans led scientists to conclude that the Sulawesi (Celebes) region is the epicenter of marine diversity.

In 1990, a marine scientist from the University of Guam

documented over 150 genera of hard corals on Bunaken island, the principal island of the Bunaken Marine Park in North Sulawesi.

From a recent survey, 3000 species of fishes are found here in the Indonesian archipelago, compared to 2000 plus in the Philippines and just over 1300 in Palau. As the distance away from Sulawesi increases, the number of species decreases with a species low of 125 at Easter Island, far east of New Zealand. Marine scientists have confirmed that most of the reefs in North Sulawesi consist of over 90 percent live corals, a high percentage relative to coral reefs around the world. In addition, the number of endemic species here exceed those of the

Philippines and Great Barrier Reef system (White, 1992).

Due to the remoteness of the area, only the Bunaken Marine Park and the Sangie-Talau islands of North Sulawesi are accessible to divers and marine naturalists. Dr Hanny Batuna, an epidermic disease specialist, opened the first diving resort in Manado in 1984 and in 1992 launched the first liveaboard dive vessel.

His beach-front cottages face the 75,275-hectare marine reserve comprising five islands. Its 3300-foot deep oceanic trench separates Kalasey and the reserve. The trench replenishes the reefs with nutrient-rich water providing a constant food source for resident pods of pilot whales, orcas and spinner dolphins.

The underwater terrain of Bunaken Marine Park is mainly vertical walls that plunge deep into the abyss. The first 20 feet of water teems with a foliage of red, green, pink, purple and yellow colonies of tunicates, anemones, corals with fairy basslets, sponges and gorgonian fans. Every crack and crevice on the substratum are occupied by aquatic life forms.

Massive congregations of pyramid gold, white and black butterflyfish (*Hemitaurichthys polylepis*), and blue royal fusiliers (*Caesio xanthonota*) frolic blithely along the wall. Napoleon wrasses (*Cheilinus undulatus*) cruise in the deeper water where giant species of pink, purple and yellow *Dendronephythya* soft coral dwell.

Schools of hammerhead sharks hang out beyond the limit of artificial gills, but often a young delinquent or an ancient nautilus wanders to shallower water. Around the 100-foot depth, the walls and entrances of cavern systems are densely populated with pendulous pink sponges, red whip corals, short yellow and orange soft corals.

The Sangie-Talau islands, north of Manado, harbor some of the richest reefs in absolute pristine condition in the world. The dive sites are comparable to or favorable to those of locations such as the Red Sea, Coral Sea, PNG, Solomon and Sipadan. The varieties of terrains range from oceanic seamounts, underwater volcanos, sunken villages, atolls, wrecks and fringing to barrier reefs. The best way to explore the Sangie-Talau islands is on the *Serenade* liveaboard vessel with Dr. Batuna. The signature dive on the *Serenade* is on the island of Ruang.

The remnant of rich volcanic soil left behind by a 1949 eruption has evolved into one of the greatest wonders in the marine world. Recently, a team of marine photographers from the U.S. was so impressed with Ruang that they extended their scheduled two-day stop to five. Unequivocally astounded with the grandeur of the corals and fish life, they vowed to return. Schools of barracuda, eagle ray, rainbow runner, trevally and tuna patrol the steep slope. Here the crucible of creation spellbinds the intrepid visitors with a myriad of life among giant sponges, multi-colored pink, green and gold fans and whip corals.

Other bewildering and mind-boggling dives include *flying* through a channel powered by a six-knot current, passing through surprised schools of kingfish, turtle and trevally, or a trip back to the past playing underwater archaeologist in a sunken village of 1892 at 150 feet. For the adventurous diver, North Sulawesi beckons. ▀

Michael Aw is the author/photographer of the anthology Beneath Bunaken, and was awarded the Governor Gift of State for North Sulawesi.

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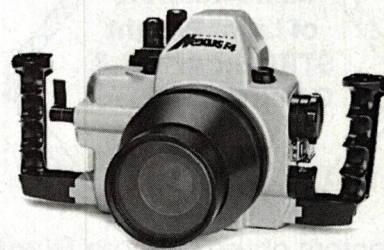


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ADVANCED DIVING JOURNAL

SPEARFISHING

ETHICS, ANTICS AND ACTION

With the anti-spearfishing crowd getting more vocal and the hunters trying to add legitimacy to their sport, the fabric of this tradition is being stretched into new shapes and its future is being questioned.

And while many divers don't like to see their favorite photo subject blasted from the sea in what seems to be a Barbaric way, they still want to enjoy the delights of a giant seafood platter.

Then again, bluewater hunters are a breed unto themselves. In this cover photo Terry Maas brings in a world record, 398-pound bluefin tuna (which still stands today), he shot in 1982 off of Guadalupe Island, Mexico.

— cover photo by © Howard Benedict

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TOM MORRISEY • ADJ EDITOR



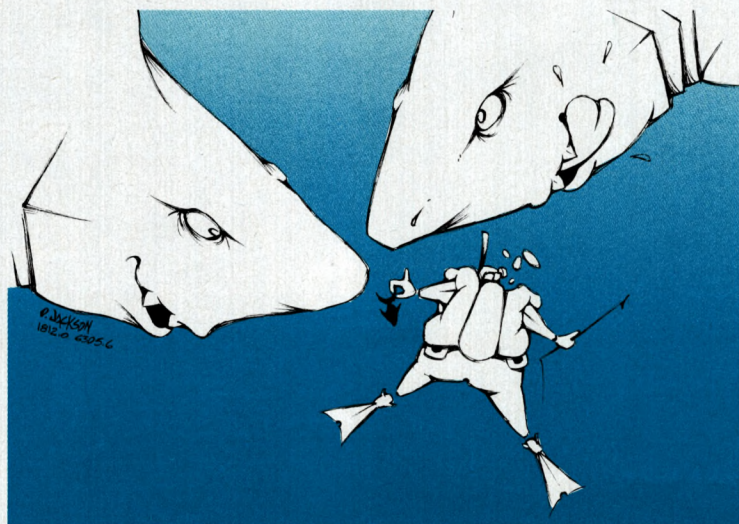
My Life in the Food-Chain

A FISH, A SHARK AND ME!

Bubbles rising like an exclamation point, Jean Pierce lowered her camera and pointed, wide-eyed, behind me.

I turned and looked. A squat, gray shape about the size of two NFL linebackers went cruising by about 20 feet away in the sub-Atlantic mist, the dorsal fin projecting like a mainsail. A glance at my dive computer showed 10 minutes of decompression obligation already accumulated. I raised a thumb in the "up" signal; Jean readily acquiesced.

Had this been one of our regular dives, a shark would have called for a prolonged photo session. But it wasn't a regular dive; we were shooting photos of spearfishing for a magazine article. I was the model on this dive, and already had two decent-sized snappers in the battered net bag I was using to hold my catch. One of the fish, not quite dead, was pumping out blood like a Sylvester Stallone movie. We'd heard that the sharks in this area of the Outer Banks could get quite aggressive around spearfishers. Neither one of us was eager for a demonstration.



The occasion was a sort of working holiday off the coast of North Carolina. Jean and I had put together a trip with the state tourism people to write on a variety of topics, including spearfishing which is highly popular in the area. Knowing that sharks would be common, we'd invited Marty Snyderman to join us. Marty, who single-handedly fills up about half the air time on the Discovery Channel's "Shark Week," was eager to get some photos of the fierce-looking, but actually quite docile sand tiger sharks which gather in considerable numbers on many Outer Banks sites.

After making dives on the *U-352* and the *Papoose*, we'd come to the wreck of the *E.B. Hutton*, a freighter which was torpedoed by the Germans in WWII. Marty stayed down only a few minutes. The wreck, while well-populated with fish, was full of common species, already well-documented in Marty's stock catalogue. For spearfishing, however, it was perfect, so Jean and I stayed in to shoot a roll of film and, hopefully, to shoot enough fish to grill dinner that evening.

In between a few set-up shots we managed to get a couple of fish in the bag. "In the bag" was literal; the mate on the charter had warned us that the local barracuda (which can approach six feet in length) had become expert game-snatchers. Barracuda hunt primarily by sight, though, so we could defeat their game of snatch-and-grab by eschewing stringers and using a nylon game-bag instead. The mate had even gone so far as to loan me a game bag, an old one with a bent metal bail which (I soon discovered) was almost impossible to open one-handed.

After chasing after a grouper which had obviously done this before, we ended up out of sight of the anchor line. That's when Señor Tiburon had decided to join the party, on which note Jean and I elected to call it a day.

Except I couldn't. Jean, who'd stayed above me for much of the dive, was clear on her computer, but I would have stops at 30, 20 and 10 feet. Still, given the bleeding fish in the bag, it felt good to see the depth gauge getting lighter. As we passed 40 feet, the bottom became a gray blur, and we continued ascending without an upline through misty water, our eyes on our computers.

Until I noticed movement in the distance. There, indistinct in the haze, but on the same level as the two of us, was the same squat, gray shape we'd seen on the bottom.

Oh-oh. Guess who's coming to dinner?

My first suspicion was that the shark was following us up. I stopped ascending and turned slowly, checking all points of the compass. Sure enough, there was the shark again, circling.

At my waist, the game-bag moved as a fish within flopped, and a thin green fog of blood wafted out. Barracuda may hunt by sight, but sharks do not. Sharks have an acute sense of smell, able to detect even a tiny amount of blood in the water, and it was the blood from the game bag which undoubtedly was drawing this shark. Drawing it and confusing it because, while it saw two creatures nearly as large as it, its sense of smell was telling it "something small and weak is dying."

Turning to Jean, I lifted a thumb, pointed to my eyes, and cupped my hands: "Go up and look for the boat."

BY TOM MORRISEY

She all too readily agreed and swam upwards. I turned back and considered our many-toothed problem. Sharks have small hearts and walnut-size brains surrounded by thick, tough cartilage. It's possible to take a shark with a speargun, but those who do so will usually arm their spear with a power-head — a special tip which holds a large-caliber pistol round and a firing pin. These discharge upon impact, giving old serrated-tooth an extra-large dose of Dirty Harry persuasion. My spear, on the other hand, was tipped with a small winged rock-point, suitable for panfish and small gamefish. If I shot it at a shark, I wasn't likely to do much more than annoy it.

Still, I wasn't all that worried. While I couldn't kill this shark with my gun, the nearly six-foot, pointy-tipped implement would still function as a pike — something to brandish and keep between me and old Munch' Em. As an experiment, I pointed the gun at the shark and swam rapidly toward it. Sure enough, it turned and high-tailed it into the mist. Except it seemed to reappear almost

instantly from another direction. What did I have here, a teleporting predator? It took me a moment to realize that I didn't have a shark homing in on my game-bag; I had two.

Lovely. Up top, Jean clanged on her tank with her dive-knife and pointed off to her right. Somewhere in that direction was the boat — home base, olley-olley oxen-free. I "okayed" her back and, in a moment of gentility which still astounds me, signaled for her to get out of Dodge and let me deal with the situation.

Two sharks and eight long minutes of deco left. Hmmm. To make matters worse, the sharks had started to leave about 180 degrees of separation between the two of them, so I could only watch one at a time. And sure enough, just like in the bad movies, they were circling more closely now. I charged again at the nearest one — it darted away but came back almost immediately.

Meanwhile, Jean was calling the calvary. "Tom's got sharks on him!" she yelled as she surfaced. On the boat, Marty Snyderman sprang into action, cowboying a tank and

BC over his head and grabbing his mask and weight belt.

"Sand tigers?" he asked.

"No!" Jean replied. "Big, nasty, gray ones — bull sharks or something."

Marty slowed down.

"How many?" he asked.

Jean poked her head under. Unfortunately, at the same time, a group of large amberjack wandered through between her and me. In her agitation, she wasn't geared to differentiate between species.

"At least SIX!" she called back.

The sea-savvy Snyderman shrugged off the tank and weight belt. Scowling pensively, he fished out his camera bag and selected a Nikon and an extra-long telephoto lens.

Back in the water, the sharks had stopped circling and were now taking turns making lazy runs in my general direction. Charging them now had little effect. They were so close that I could identify not only species (sand bar shark), but gender (females). And neither one was acting like a lady.

Giving up my lunch-money seemed like



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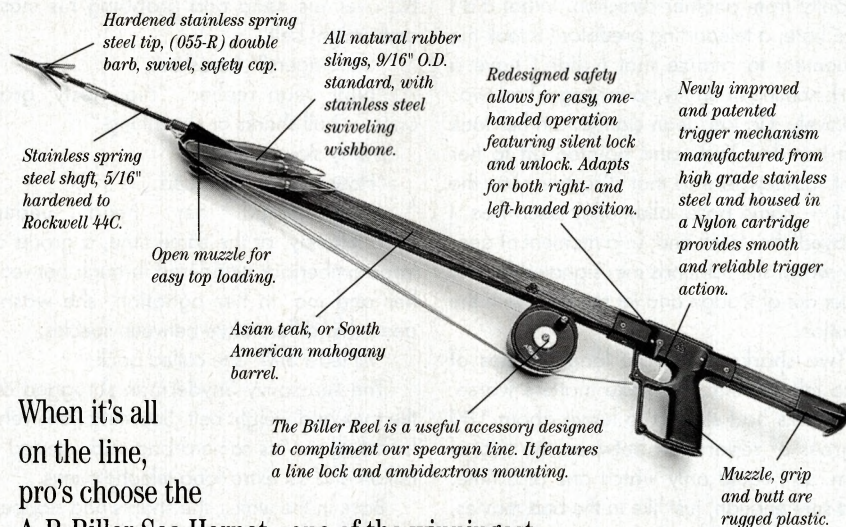
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the wisest option. Keeping the gun between me and my big, gray problems, I reached with my free hand to open the game-bag.

It was stuck closed.

The larger of the two sharks now altered her flight-path slightly and bumped my leg as she went past. Any hope of blustering my way out vanished — it's amazing how quickly even a walnut-size brain can figure out that you're bluffing. I wrenched at the game-bag bail, but it was clammed up as tightly as a Whitewater witness.

Ms. Sinister made another run at me, rolling slightly and opening her mouth. A decision seemed wise. I imagined firing the speargun, imagined being attached by 20 feet of line to about 300 pounds of anger and bad attitude, with a second shark waiting to join the party.

It didn't seem wise, so I turned the gun around and, just as the shark zeroed it, I nailed her in the nose with the gun butt.

You know how they say sharks have extremely sensitive snouts — how you can hit them there and they'll head for the next ocean? Well — bull-pockey. I hit this one so hard my arm rang, and all she did was veer away slightly and then turn around as if to say, "I like a man with a little fight in him."

Bail, schmail. I didn't bother trying to open the game-bag any more. I unclipped it and threw the fish — game-bag and all — as far away as I could. The shark turned towards me, then towards the sinking bag, then towards me, as if trying to decide whether "pissed-off" or "hungry" had priority.

"Hungry" won. She swam down after the slowly sinking bag. My heart fluttered in relief — and then I remembered the second shark. Where was it?

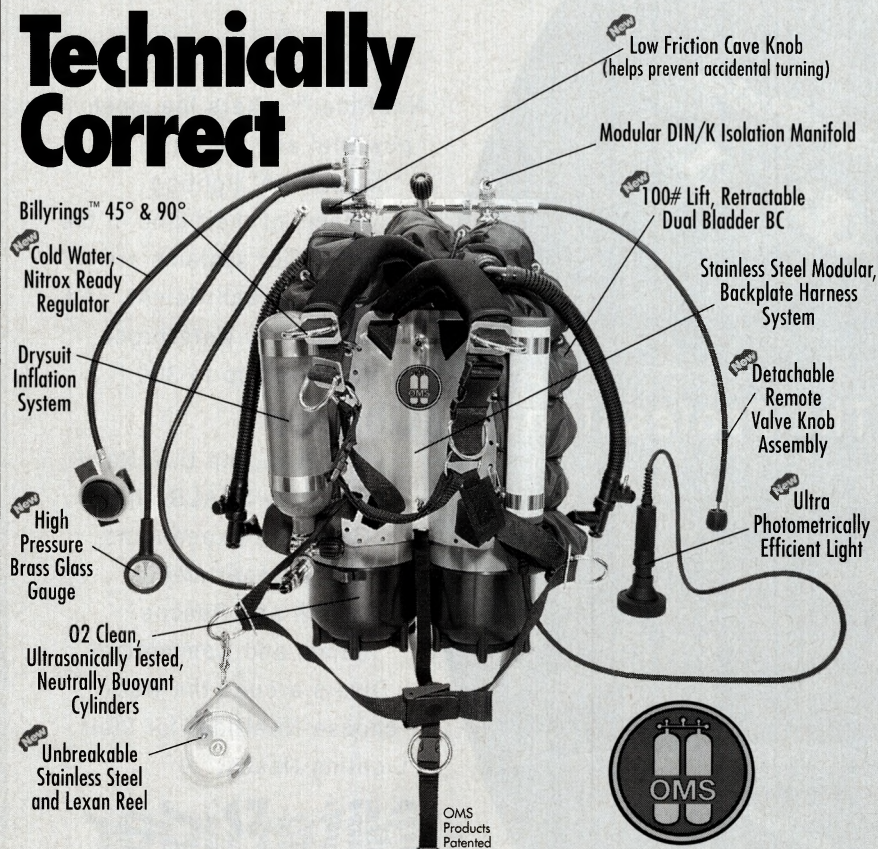
As if in answer, a pressure wave of water hit my back and I flinched as a couple gray yards of cowboy-boot material arced over my shoulder and joined her companion in the race for the sinking yellow-mesh bag.

The computer winked clear — not that it mattered. I was headed up regardless. A Sea World dolphin couldn't have made it to the ladder in less time. I climbed aboard and was immediately surrounded by concerned, questioning faces.

"Uh, hi," I told them. "Anybody want to go out for steak tonight?" ■

ADJ Editor Tom Morrissey lives in Farmington, Michigan, where he still types with all 10 fingers.

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Teaching Bad Habits

Few issues in diving ignite passions more than the spearfishing issue. Views range from "It's acceptable if practiced responsibly" to "Burn those spear-toting reef-rapers at the stake — slowly." For underwater educators, this provokes a thorny issue: should spearfishing be taught through formal classes?

A spear fisher does, after all, have an effect on the environment. And that can either be controlled (taking migratory species that commercial fishermen take) or disastrous (shooting an angelfish and then asking what it is). In the face of concern for the environment, the pro of teaching an underwater hunter course is that dive leaders may guide spearfishers to hunt only in environments that can sustain the loss to fish populations, to take only legitimate game fish of proper size (according to law), and to take only what the individual will eat.

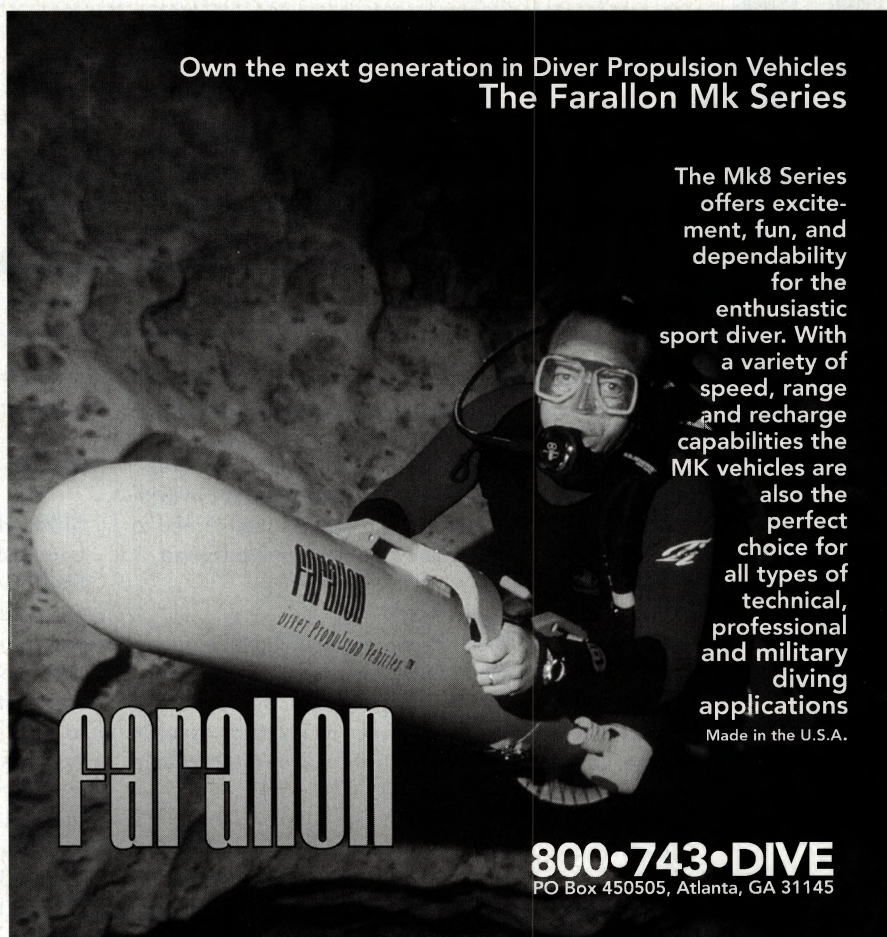
So, should spearfishing be promoted as an underwater activity — touted with the same zeal we give to Underwater Naturalist and Research Diver specialties?

I don't think so. Spearfishing differs from other diving activities and should be treated differently. Of all diving activities, only underwater hunting and collecting sets out, as their goal, to remove elements from the marine environment. Promotion of spearfishing implies encouraging people to spearfish, rather than accepting that some people enjoy it, will do it, and can do so with minimal effect on the environment. Of course, if too many people spearfish, no diving environment would be able to sustain a fish population, and spearfishing would become a pointless activity, perhaps outlawed after the fact. In this respect, it's actually in spearfishers' best interest to keep the spearfishing population small. One way of doing this is keeping it limited to those who actually seek it out rather than having it presented as something they *ought* to do as divers.

For the present, the responsible stance for educators is a middle ground which endorses teaching spearing to those who seek it, without promoting it. ■

Contributing Editor Karl Shreeves is vice president, technical development, for PADI and DSAT. While he used to hunt, he no longer does so, "Although," he said, "if I encounter a particularly large and menacing lobster, I may sometimes remove it for the safety of other divers."

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Speaking for the Fish

PAUL HUMANN SPEAKS OUT

The author of the well-known, *Reef Identification* books and videos, Paul Humann, has been diving and photographing fish for decades. He is an active conservationist, environmentalist and proponent of divers' rights. Recently, ADJ editor Tom Morrissey spoke with Paul at his home in Florida. The conversation turned to spearfishing, and the following interview transpired.

STM: Did you ever spearfish?

Paul: Sure did. When I began diving in the '60s, spearfishing was the primary activity, the reason you got in the water — much as photography is today. But I made the move to photography fairly rapidly. By my second year of diving, I was taking pictures with a Brownie Hawkeye molded into a plastic housing.

STM: What is your view now, on spearing in general?

Paul: I'm very much against it. It's probably the most destructive form of sport fishing, simply because it is the most selective. The largest and most mature fish are just

naturally the ones which will be the prime spearing targets. Yet it's known that, among the gamefish on a reef, it's the large old mommas and poppas that are the great producers. Look at red snappers — for every single egg the young one produces, the more mature one will produce 212. By selectively spearing the large fish, you dramatically decrease the potential for offspring.

STM: But spearfishers will respond that, by and large, they're spearing for the table, taking pan-size fish.

Paul: What's a pan-size fish? You see a nice-size fish and you nail him. When I started diving, some friends of mine lived in Sarasota, and the macho thing to do was go out and nail a 300-pound jewfish. I remember vividly one time that they speared one so large they couldn't get him out of the water. They had to drag him near the beach and then use a Jeep with a winch to pull him out. Down in the Keys, you used to regularly see pictures of spearfisherman with huge members of the sea bass family — groupers and so forth — that you simply don't see anymore. Do you really expect me to believe that the average

spearfisherman would not spear a large grouper simply because it was too big for the pan? Let's get realistic.



STM: How would you propose getting back to a point where such species are common again?

Paul: Everyone knows fish populations have dramatically decreased in Florida in the last 20 years. Size limits, catch limits, seasons — most of these so-called "solutions" haven't worked. Believe me, it is not just the spearfishermen — it is just too many fish being removed from the reef to keep healthy breeding populations. In Pennekamp, for example, populations are still declining where spearfishing has not been allowed for over 30 years. The one thing that has seemed to work around the world are no-take zones or replenishment reserves. In the first draft of the Florida Keys National Marine Sanctuary Act, scientists wanted to put a mere 6 percent of the area into several no-take reserves. Yet hook-and-line fishermen were opposed to any no-take zones. They organized and fought it so well that in the final draft, they got it knocked back to less than 1 percent and only a single reserve. They don't want any restrictions and don't have enough foresight to see where this is going to end up in the future.

STM: You're against hook-and-line fishing as well?

Paul: To a degree. I'm pretty tolerant of it because it is non-selective and the larger fish have a better chance of surviving if they're fished that way. But the sad fact is that sport fishermen are pretty much against any form of no-take zones and want to keep the status quo — which is a formula for disaster. They need to be educated on this unfortunate position, but that's another subject.

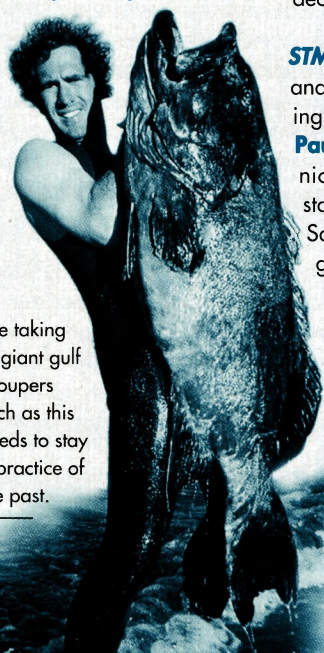
STM: What about if spearing were allowed only in a selective size window for targeted species — not too big and not too small — would that work?

Paul: In addition to spearing the fish, I have another problem with spearfishing. They scare the fish away from all divers. Just look at the reaction of fish to divers inside the Pennekamp Reserve compared to outside. The majority of divers do not spearfish. Doesn't this majority have a right to see fish in their natural state, without fear of divers?

You know, here in Florida, jewfish have only been on the moratorium list since 1991, and divers are already seeing them again.

STM: But if jewfish are coming back, it would seem that

When I started diving,
the macho thing to do
was go out and nail a
300-pound jewfish



The taking of giant gulf groupers such as this needs to stay a practice of the past.

© Carlos Eyles

some selective restrictions are working.

Paul: A charter captain I know has been taking people out now for several months to a shipwreck where the main attraction is a large jewfish. Two weeks ago, he took a charter out there and guess what — this big, magnificent animal had a spear in him. If spearing weren't allowed at all, there'd be less chance of things like that happening.

Let me give you another example of the problem. So many novices just don't feel good if they don't get something, and they'll shoot just about anything just to avoid the feeling that they've failed. Recently, I was in the West Palm inlet and saw three divers coming out of the water, and one of them was holding up a fish like it was a trophy — it was obviously the first one he'd ever speared — and it was a blue angelfish. Now, a true sport spearfisherman would never do that — and would say it happens rarely — but I wonder.

STM: Many speargun manufacturers and other proponents of spearing are now encouraging divers to hunt bluewater, rather than reefs, and to concentrate on migratory species. What's your reaction to that?

Paul: Bluewater spearing is certainly better than what's happening now. It concentrates on gamefish which are taken by commercial fishermen anyway. But I wouldn't endorse this on a wholesale level. I would object, for instance, to going after swordfish — the catch size is out of kilter, and commercial fisheries are already taking individuals too small to have reproduced.

STM: Would you allow any spearfishing on reefs?

Paul: If you look at most dive destinations around the Caribbean, spearfishing is not allowed — because the reef-fish population enhances their economy — that's why divers go there. But, personally, I would make this kind of a concession — let's take great blocks of area out of spearfishing but leave a few small zones. Spearfishermen are taxpayers too but certainly should not be allowed to spear on the broad scale they do today.

If the spearfishing population says they'll support such a stance, we as divers can get the legislation through. Then both of us can take on the hook-and-line people and get the no-take reserves that will sustain and improve current reef-fish populations for all of us. ■

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high-visibility mask, a large-boar snorkel, weight belt, wetsuit, long freediver fins and a camera or a spear. His speargun, six-feet long, has an effective range of just 15 feet. Attached to the spear is a stretchable-300-foot line and one or more floats. The floats serve two purposes, they help play and locate speared fish and they warn boaters of the diver's presence.

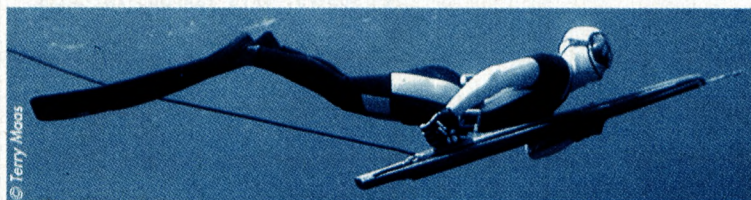
The origins of bluewater hunting date back to the late 1930s when the first goggle-equipped, California freedivers dove from the beaches of La Jolla. Without the yet-to-be-developed snorkel and fins, these pioneers gulped air and frog-kicked their way to the shallow bottom where they gathered abalone, fish and lobster.

Jack Prodonovich and Wally Potts, members of the oldest American diving club, the "Bottom Scratchers" of San Diego, led the way past the kelp forests out into the bluewater. Jack and Wally presided over the development of the mask, snorkel, fin, rubber-powered speargun and underwater camera. Imagine the thrill they felt when they replaced their nose clips and double-vision-causing goggles with the dive mask. About his first swim in the ocean with fins Jack recalls, "It was unbelievable, my new-found speed through the water made my hair wave and flow in the current!" After mastering near-shore reef fishing, the pair's interest was drawn to the more elusive midwater species, white seabass and yellowtail.

I recently spent a day with Jack and Wally pouring over their voluminous scrap books. At age 79 and 84, both divers' memories remain as clear as the water they hunted. One picture leads to another story. Excitedly, they talk as one, each picking up the story line after the other. The constant theme is respect for their prey and for the bluewater experience.

Today, Greg Pickering of Australia is one of the world's best bluewater hunters. A commercial abalone diver, Greg spends half the year fishing for abalone and the other traveling the Pacific for bluewater fish. I've watched Greg make impressive freedives. Once while diving in a current in which we had to swim at a fast pace just to keep our position, Greg tipped over and dove into 80 feet of water, tied our anchor rope onto the top of an offshore pinnacle and then surfaced a minute-and-a-half later ready for another dive.

Bluewater hunting has its rewards, the opportunity to capture pelagic gamefish and to document bluewater inhabitants on film or video. Greg is a master of all three. He has the pending world record for the southern bluefin tuna, and he's taken photographs of bluewater species in their natural habitat. Recently, this silent, two-minute-a-dive stalker captured schools of elusive Mexican yellowfin



Bluewater diver Gerald Lim demonstrates the soldier-at-arms position.

can appear, and from any direction. He becomes part of the food chain.

Armed with the air in their chests and a camera or spear, divers swimming the bluewater observe nature close up as silent bubbleless hunters. Bluewater hunters use the most environmentally sound way to hunt the oceans because they limit the number of fish they take and because they control the size, species and in some cases, the sex of their catch. They target pelagic fish which are widely dispersed and generally have a short life cycle. Hunting fish one-on-one, in their own environment, bluewater hunters can be compared to American Indians who survived for eons armed with only their wits and spears.

Free to roam with the wild animals, free to fly gracefully in any direction, the bluewater hunter experiences an exhilaration known only to trained freedivers. His mental ease and special physiological adaptations make him feel as if he has no need to breathe, now or ever. It is narcotic. Peaceful. Part of him feels as if he could remain suspended beneath the waves forever. Well-trained bluewater hunters spend 40 minutes of each hour underwater. Their average dives last a minute-and-a-half, while the surface interval might take 20-30 seconds.

For gear, the bluewater hunter uses a low-volume,

BY TERRY MAAS

tuna on video, just feet from the lens.

Hunting the bluewater has its risks: boat accidents, shallow-water blackout, line tangles and sharks. Most bluewater divers avoid shark encounters by exiting the water when sharks appear. Divers never spear them except in self-defense. Greg tells of a close call he had while diving with his friend Peter Herbert (Herb) of New Zealand in the water off northwest Australia:

"Herb and I, swimming along the edge of the drop-off, came across a dozen silvertip sharks. Even with no fish in our possession, they became very aggressive, circling 30 feet below. The biggest, about seven feet long and scarred along its back with apparent mating wounds, broke from the pack. Swimming upward in a spiral fashion, it came close to Herb with its mouth opened slightly. It charged. Herb had no choice but to spear the brute. It was knocked senseless for 10 seconds before it started thrashing wildly. It rushed me next, and I, too, fired.

It kept thrashing and rolling, eventually becoming tangled in both of our float lines. Before I knew what was happening, the shark had rolled its body up in my line, its head tangled around my right leg. My line had caught on my leg-mounted knife sheath, allowing the shark to roll up in the line against my body. Frantically, I pushed its head away with my gun, trying desperately to prevent it from biting me. It was only after the rubber strap broke on my knife sheath that I could free myself from this Siamese tangle. Miraculously, I remained uninjured."

Greg represents a growing segment of the diving fraternity interested in developing their freediving skills while at the same time interacting with the wild animals of the open oceans.

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Terry Maas is a freediving veteran with 38 years of experience and holds consecutive spearfishing records for bluefin and yellowfin tuna. His 1992 video *Bluewater Hunters* has been viewed by over 40 million people. Maas' first book, *Bluewater Hunting and Freediving*, was published in 1995 and his current book, *Freedive!*, co-authored with David Sipperly, covers all aspects of the sport of freediving.



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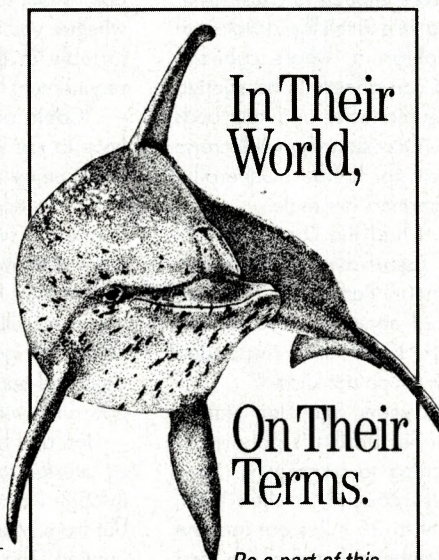
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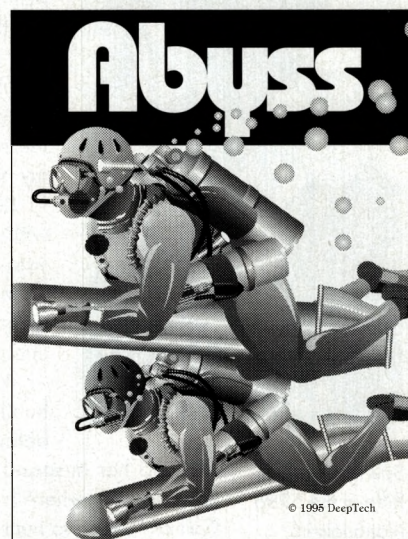
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The Lady's Got a Gun

FEMALE HUNTERS

Last year, at the Bill Crow Memorial Dive Tournament off Todos Santos island, the winning fish was a 38-pound white seabass taken by J. Riffe. But the "J" in this case was not Jay (a well-known West Coast spearfisherman). It was Julie — his 23-year-old daughter.

"I feel really dumb admitting this, but I forgot to bring a knife that day," recalls Julie, a world-class free-diver who was recently featured in a pictorial in *OUTSIDE* magazine and works full-time helping her father with his speargun business. "And the fish was so big — it just ripped the gun out of my hands, so I fought it from the surface. Then I made about 20 or 30 free dives over the next half hour, getting my gun, my line and my fish out of the kelp."



Spearfisher Julie Riffe at the 1996 Nationals in Honolulu, Hawaii.

Divers like Julie — winner, with Linda Gray, of the U.S. National Championships in Hawaii last year — are splitting open the stereotypes which have long kept spearing a predominantly male sport. But women spearfishers are still rare enough to cause comment. I hunt a little in the frigid waters of Northern California, where cabezon and lingcod can generally be spotted around rocky pinnacles and kelp beds just offshore. Occasionally, we'll cruise the sandy flats for halibut. Generally, my hunting partners are male.

Recently, I had the chance to talk with active spearfisher Jan Mackey, who lives near Pensacola, Florida. When I asked her why more women divers don't hunt, she responded unequivocally: "I do not know."

About 10 years ago, Jan started hunting with her brother's pole spear before switching to band-guns. Now she and her husband take off frequently in their boat, motoring anywhere from eight to 25 miles out into the Gulf of Mexico to hunt cobia, amberjack, triggerfish, and the occasional grouper or red snapper.

Now, personally, I first tried hunting out of curiosity. Would I like it? How would it feel? On my first hunt in North Carolina, I was tremendously relieved when my first couple of shots hit absolutely nothing. But on the third attempt, I grazed a hapless fin fish. Bits of its flesh were torn from its body. I felt terrible.

When I mentioned this to Jan, she said that her motivation was fueled in large part by the nature of diving in the gulf, namely poor offshore visibility, coupled with very

few colorful reef fish — conditions similar to my own. We both enjoy eating fish, which, of course, is a big motivation. But when talking to Jan, it's pretty obvious what really attracts her to the sport; you can hear it in her voice even if she doesn't say it. It's the excitement of the hunt and the satisfaction of being a skillful hunter.

"Amberjacks and cobia are especially fun to pursue, but they're big and powerful," she says. "It can be dangerous. If you don't get a real good shot on them, they can go ballistic and wrap you up. It takes a while to calm down some of the bigger fish and get them on a stringer. Also, you might have to chase the fish. During that time, you're exerting a lot of effort, using a lot of air. A big grouper, on the other hand, won't go crazy on you. The grouper, as well as snapper and triggerfish, are more likely to try to get under a structure and hide when they notice that divers are in the water. They may take a while to pull out."

It's very important to keep track of your air supply, she warns, when hunting the big fish, and to make sure you don't shoot something bigger than you can handle. "Also, whether you're a man or a woman, you have to be comfortable in the water, and that is the most important requirement for spearfishing."

"Cobia or amberjack will be free-swimming, so you have to just watch out for them. I love the taste of cobia, and I enjoy shooting them the most; they're more of a thrill. We don't always see them; when we do, they just happen to swim by, so it's an open-range shot. There's more skill involved in that."

Jan aims for the back of the head at the backbone. "If you don't kill it right away, you usually paralyze it," she says. How good is she? "Well," she says, "I have good days and bad days. It's not that difficult, but it depends on how often you go."

Jan and her friends hunt year round since water temperatures stay fairly mild in the Gulf. From November through February, they head out once or twice a month, but from March through October, they do most of their hunting. The fishing is actually better in the winter, she says, even though the seas are rougher. There is less pressure from other divers, the visibility is better, and the colder water seems to bring the fish in closer to shore.

Recalling a halibut hunt of my own north of Monterey, California, brought predators to mind. While skimming the wave-sculpted sandy bottom in about 15 feet of visibility, a large mass brushed by me so quickly I never actually saw it clearly. As the adrenaline fired through my body, visions of the Great White consumed my mind, and I don't mean the premium bottled variety.

BY JEAN PIERCE

I was immensely relieved that the dive-bomber turned out to be a rude sea lion, but then I started to wonder, "Why, exactly, did it zip by so fast? Was something chasing it? Could that something be far behind?" Suddenly, I wasn't having fun anymore — the thought of turning from predator to prey was not appealing.

So I asked Jan if she had encountered problems with sharks. "Not normally," she answered, "but there are some pretty aggressive ones around here — tiger sharks and bull sharks. We don't see them very often.

"The closest incident was when I was in the water by myself at the end of a dive, and I didn't see anything as I was sitting on the anchor line with a lot of [speared] fish. My buddy had just gone up to get on the boat. After doing a safety stop for another five minutes or so, I got to the back of the boat and threw my fish on board. All of a sudden the people in the boat looked back and said, 'Get in the boat, NOW.' I didn't ask any questions. They somehow lifted me onto the boat with my legs hanging off, and there was this big bull shark coming fast, right behind me."

Does she have any qualms about hunting? "I don't think about it that much; I try not to think about it that much because I really enjoy eating what we catch. I'd much rather eat what I shoot. I know where it's been — I won't even touch anything in a fish market."

Many veteran spearfishers seem to have their own rules, far beyond what local fish and game laws mandate. Free-diver Julie Riffe comments, "Bluewater hunting — hunting in deep water away from reefs — is far and away the fastest-growing area of the sport. And it's a responsible way to hunt, which avoids depleting reef fish. It's amazing; I talk to people now who live hundreds of miles from the ocean but will travel to free-dive and hunt bluewater."

While spearfishing among men and women may be growing, my preference, by far, is still to photograph marine life rather than killing it. Nevertheless, after flooding a Nikon 8008 and spending sums of money I don't even want to think about on film and developing, engaging in a sport that results in actually putting food on the table sounds pretty sensible. ■

Jean Pierce is a contributing editor to STM and regularly hunts for specialty wines at her home in the Napa Valley.

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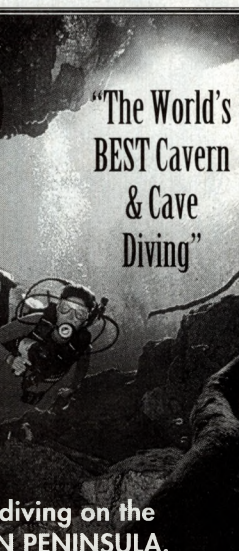
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Tournaments

SHOOTING FOR GLORY?

Presumably, if you read this magazine, you're a diver. So am I. Ostensibly, that makes us brothers under the skin — or neoprene, as the case may be. But I'm willing to say there's a better-than-even chance that I can get your dander up simply by making two statements:

- 1) I'm a spear-fisherman.
- 2) I regularly hunt in spearing tournaments.

Now, before you pull the pin and toss that thing, let me also tell you that I am a trained biologist, that I teach biology and chemistry at the high school level, and that there's a chance — just a chance — that I've probably thought this through a little bit more thoroughly than those who would like to see me impaled on my own rock-point.

I started diving in the late 1960s when I was in junior high. Back then, equipment came in one

color, air gauges were a novelty and everyone — even Jacques Cousteau — agreed that harvesting food was a Jim Dandy reason for diving. Since then, I've logged more than 5,000 dives and have seen the erosion and depletion that high populations of divers of all sorts can leave on a site. But I still love to spear and always will.

Arguments against spearing are, in my experience, highly emotional and, often as not, hypocritical. More than once, the person lambasting me for loving my sport has done so between fork fulls of the "catch of

the day" at the shoreline seafood restaurant. I understand the reasoning — "I can have hamburgers back home — I'm gonna enjoy some fresh fish" — but just where do these people think the fish came from? The red-snapper tree?

Fish taken commercially have been netted, long-lined or caught in a fish trap. All of these methods produce bi-catch — other fish which are caught along with the intended species and generally tossed — dead — back into the ocean. In many cases, bi-catch far exceeds the intended catch, and the blackened mahi-mahi you had for dinner last night may have been obtained at the cost of a dozen flying fish, a puffer, some cigarfish, two barracuda, a small shark, and maybe even a spotted dolphin or a hawksbill turtle. I can't remember the last time my spearfishing colleagues and I set out to get some hogfish and wound up with French angels instead. In spearing, bi-

catch is non-existent.

Most coastal states, such as Florida, have established game laws which provide reasonable size limits and daily limits for spear fishermen and anglers alike. Those who follow the rules and guidelines set up by the Departments of Natural Resources can continue to harvest a renewable resource without threatening fragile species. In Florida, for instance, it is illegal to take Nassau grouper as that animal is an integral part of the reef ecosystem; migratory species, such as black grouper, are legal. In this case, the spearfisher is actually more environmentally protective than the angler, as a fish caught by hook-and-line and then released is subjected to stress, bruising and possible infection. Those passed over by spearfishers are spared the trauma.

So what about tournaments? Contrary to what you may believe, tournament spear-fishing does not have the same effect as tossing a lighted stick of dynamite onto the reef. Tournaments take place over hundreds of square miles of ocean, and most contestants will avoid areas being speared by other competitors or even dived by anyone else (on the basis that "they're scaring away all the fish"). Most competitors, like me, take part because they like the social interaction, kicking back at the end of the day and listening as the tall-tales soar into the stratosphere. Game laws still prevail, and (Boone-and-Crockett imagery aside) all of the tournaments in which I compete now require that fish harvested be either taken home by the participants or donated as foodstuffs to a list of eager charities. None of the resource is wasted.

Many tournaments have further adapted with the times with certain prize categories being for a fish closest to a set moderate weight rather than for the absolute largest fish. This requires not only hunting skills but the ability to accurately gauge fish size underwater. Typically used for more desirable table species, such as snapper and grouper, this method leaves the hardest and most mature "monsters" in the water and encourages participants to take others of a more common size. The enjoyment of the contest is not diminished.

Can I seriously damage a fish population with my speargun? Absolutely. I can also do long-term damage to a reef diving with my underwater camera — if I anchor in live reef, if I'm careless with my fins, if I swim through coral with my eye on the viewfinder, if I mash a nudibranch with the macro framer, or if I break off living coral while trying to hold steady, composing a shot.

There are jerks in all walks of life, and diving is no exception. Spearfishers who flout game laws should be prosecuted and so should the thoughtless Bozos who chug



In spearing,
bi-catch is
non-existent.

BY DAVID E. LOHR

a brewski after a dive and toss the empty bottle onto the reef. But these people are rarely the ones who dive regularly. It's my experience that the more interest one takes in the underwater world, the more one's awareness of the environment is increased. We develop a real appreciation and respect for the resource that provides our recreation.

Our social principles dictate what is acceptable and what is not. These evolve over the years — sometimes for the better and sometimes not. Education is what can save us from the force of our own emotions.

In Florida, for instance, the practice of net-fishing has now been outlawed within state waters. An ecological coup? Maybe not. Consider: Commercial fishing has long been a big business for Florida (most of the fish eaten by vacationers in the Caymans, and many other Caribbean hot-spots, has traditionally been caught off Florida and either flown or shipped in). But outlawing netting changes the economic climate. If a commercial fisherman finds that line fishing is too costly a practice, he may go out of business and sell his land to commercial developers who'll put in high-rises, consume vast quantities of already scarce freshwater, generate tons of garbage, sewage and fertilizer run-off, and obliterate the nearshore environment to put in a 100-slip marina. Only time can tell whether this ugly consequence will materialize, but one wonders whether Floridians really weighed all the consequences before casting that vote.

Fishing is one of man's oldest means of gathering food, older than agriculture, and engaged in by virtually every society which has had access to a body of water. And the competition to see who could catch the largest or most unusual fish probably dates back to the first time two fishermen ran into each other.

Among those who practice the time-honored sport of fishing, spearfishers are among the most conservative. The fact that we see what we are taking makes us more environmentally responsible, not less. So don't chastise us for what your heart says until you've really thought it through with your head. ■

David E. Lohr is a biology teacher at Romeo (Michigan) High School, the owner of Divers Den dive shop in Lake Orion, Michigan, and a repeat-winner in several categories of the Panama City Open and other prestigious national spearfishing tournaments.

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Tools of the Trade

A LOOK INTO SPEARGUNS

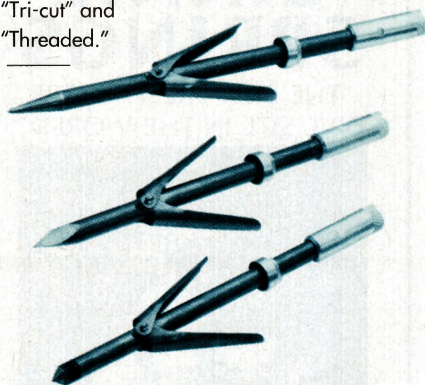
Top: Riffe's "Island" speargun with reel.
Below: A.B. Biller's tubular stainless steel gun with reel.

The original fish-spear was probably a wooden stick, sharpened on one end and possibly notched to keep the catch from slipping off. Today, you can find spearfishing gear made from all types of materials: stainless steel, aluminum, hi-tech polymers and even — wood.

Running on Air

Without a doubt, the most high-tech of today's guns are the pneumatics. These guns contain a tank which holds compressed air — much like a scuba tank. To cock a pneumatic, you place a loader over the tip of the spear and push it down into the barrel, moving a piston back. Firing releases the piston, thrusting the spear-shaft out of the barrel of the gun.

A.B. Biller's Slimline tips: the "Rockpoint," "Tri-cut" and "Threaded."



"With a band-powered gun, cocking gets harder as you pull the bands back," says Byron Lenzch of Mares, a leading supplier of pneumatic guns. "With a pneumatic, the loading pressure is consistent."

Pneumatics also load quickly — push the spear in, and you're done. And contrary to popular misconception, pneumatics can be reloaded virtually indefinitely underwater.

"Lots of people believe you need to pump the gun up after each shot, and others believe that a pneumatic loses gas

with each shot," says Rudy Lola of Cressi-Sub, which markets Italian-made pneumatics. "Neither is true. No gas escapes when the gun is fired. In fact, you can store a pneumatic fully pressurized, so you don't even have to pump it up before an outing."

Most pneumatics fire a slim (5/16" diameter or smaller) spear-shaft at high-muzzle velocities, which makes for lightning-quick shooting at close quarters.

"The accurate range for most spearguns is two-and-a-half shaft lengths from the muzzle," says Lola. "After that, you're in the wish range."

Pneumatics, like a scuba tank, work on a basis of pressure differentiation. The deeper you go, the less powerful the gun will be due to increased hydrostatic pressure although many pneumatic users hunt as deep as 100 feet.

One Russian-made gun, the Sea Bear, helps compensate for this simply by having a higher-pressure tank backed up by a titanium piston.

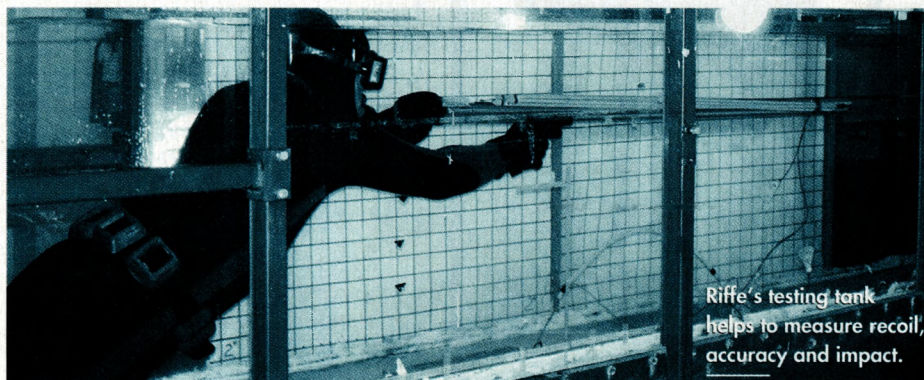
"You can effectively hunt with it at 150 feet," says Ed Stevens, who has been importing the guns for four years. "It also has a stainless steel barrel, which allows you to hunt with a bent shaft, if necessary."

The Sea Bear has a mid-mount handle, which makes the gun highly maneuverable and good for tight spaces. Most pneumatic manufacturers put the handle at the end, which makes the gun simpler to construct and service.

High muzzle speed at short distances and relatively compact size makes pneumatics popular in low-visibility diving, in freshwater spearing, and in Europe, where much of the hunting takes place inside caves and shipwrecks. In fact, virtually all the companies selling pneumatics in the U.S. — including Nemrod, which sells some of the most inexpensive — are importing their guns from Europe. Recommended retail prices range from \$110 to \$315, and the guns, while simple to use, are relatively noisy (although Mares has used soft-feel paint on theirs, and virtually all manufacturers are now using noise-reducing polymer parts).

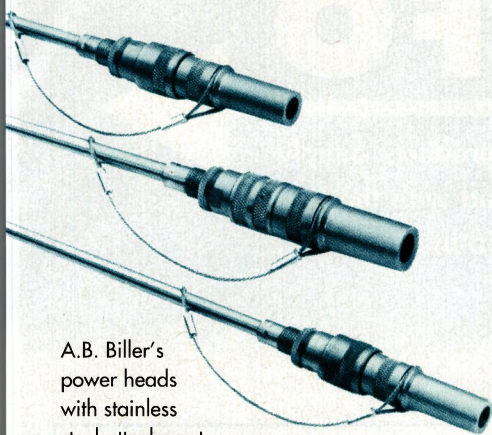
Underwater Crossbow

Older in design than pneumatics, simpler and — at the upper end of the scale — more powerful are "band guns." Like a crossbow, these guns use a



Riffe's testing tank helps to measure recoil, accuracy and impact.

BY TOM MORRISEY



A.B. Biller's power heads with stainless steel attachment cables.

cocked band to power the shaft, but unlike a crossbow, it is the band (the "bow-string," if you will) which stores the energy rather than the body of the gun. The rubber bands used are anywhere from 3/8" to 5/8" thick, and shafts can run up to a hefty 3/8" in diameter, carrying considerable momentum for penetrating larger fish.

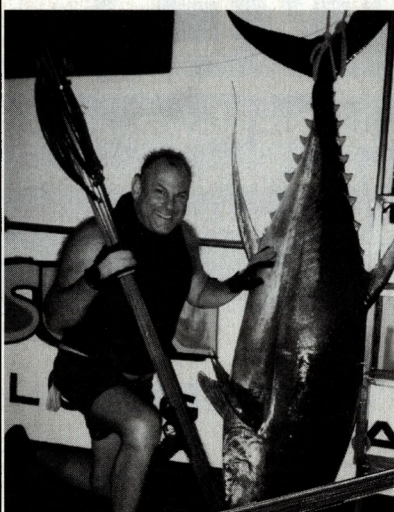
The most common band-gun material is tubular aluminum. JBL guns are aluminum bodied, and aluminum-bodied band-guns are also carried by Mares and Nemrod (which also carries an oval-bodied aluminum gun). Aluminum is a fairly resonant material, which can make these guns noisy although Mares cases their gun-body in plastic and JBL equips the larger guns with plastic guides — both tend to reduce gun noise. A.B. Biller makes a tubular stainless-steel gun which the manufacturer says is more resistant to electrolysis than aluminum and less resonant.

But some of the quietest guns on the market are made primarily of a decidedly low-tech material — not aircraft metals, or super-polymers, or unobtainium, but wood.

Jay Riffe, a Pacific Coast Spearfishing Champion and owner of Riffe International, has designed a product which reflects his preference for bluewater. His spearguns are made from kiln-dried teak — which is hard, resistant to warping and nearly impervious to saltwater. While most spearguns use powerbands with stainless-steel wishbones and notched spears, the Riffe set-up combines Dacron wishbones and spears with specially tumbled cocking fins. The result is a speargun which is virtually silent when fired.

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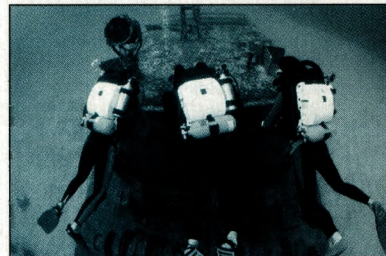


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teak/stainless/plastic construction of these guns makes them very durable — I'm still hunting with the first one I made."

Riffe's spearguns reflect West Coast bluewater methods. They are long (some as long as the diver is tall) and use up to six bands to throw a 3/8" diameter spear accurately as far as 30 feet.

On the southern East Coast and in Europe, many spearfishers favor a lighter spear, which does not require as many bands.

"To fire a 1/4" spear at a muzzle velocity of 100 feet per second will require a single 9/16" powerband," says Ditmar Biller, vice-president of A.B. Biller, Inc., which manufactures high-quality spearguns in teak, mahogany and tubular stainless steel. "To fire a 3/8" spear at the same muzzle velocity will require three 9/16" bands."

A lighter shaft is extremely quick — one usually can't even see it leave the gun — although the heavier shafts keep their momentum over longer distances. For amberjack, black grouper and other East Coast fish, a light spear with a 20-foot range is what many divers prefer. West Coast hunters, going after large tuna, need a more powerful gun with longer range.

The Moby Dick Effect

The typical speargun uses a nylon line with a shock-absorbing rubber section to retain the spear and fight the fish. Such lines are from 15 to 30 feet long, and that's obviously a problem if you're free diving and tied into a 200-pound tuna. So bluewater hunters often use either reels or long lines attached to floats — either method allows the diver to fight the fish from the surface and avoid what Cressi-Sub's Rudy Mola calls, "the Moby Dick effect."

Long fins, which get the most distance out of each kick, and low-volume masks make such diving simpler. Large-diameter snorkels allow you to keep your face in the water and your eyes on the fish as you take a breath. Stringers or game bags are a matter of environment (stringers are easier to use one-handed and handle extremely large fish better, but game-bags will hide your dinner from poaching barracuda); if you're free-diving, you can simply take each fish up to the surface as you hunt. ■

Tom Morrissey is the editor of the ADJ. He was recently seen illegally spearing a fork into a 16-ounce T-bone at a local steak house.

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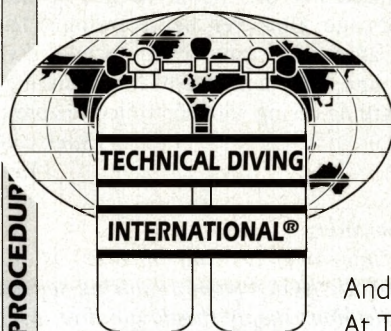
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Doctors Advice

TEXT BY WAYNE GETCHELL

Because you're a diver, there has probably been more than one occasion when you had a medical concern about diving that you needed answered. You might have even gone on a dive when you had a physical condition or injury that you ignored, or you were not aware of potential dangers because you could not find a diving medical authority. Well, that is where the *Scuba Times Online* Medical Center came from. We have on-line diving doctors who answer diving-related medical concerns. The concept was the easy part; finding a diving medical authority was another story. Thanks to the help of Chris Grant, editor of *STM*, we found Dr. Ernest Campbell, the cornerstone of our Medical Center. He has recruited seven other doctors (at the time of this writing) who provide this valuable public service. These wonderful professionals who provide their generous commitment to *Scuba Times Online* and the diving public are Dr. Ernest Campbell, Dr. Bruce Miller, Dr. David Boaz, Dr. David Elliott, Dr. Charles Sutton, Dr. Dean Heimbach, Dr. Nick McIver, and Dr. Chris Edge.

Questions presented to our doctors have covered a broad spectrum, ranging from minor ailments to life-threatening issues and are usually responded to within 24 hours. You'd be amazed at the questions we receive and our doctors' responses. It pays to ask — why take a risk, especially if it's not going to cost you any green backs?

Well, for your amazement, the following are questions presented to *Scuba Times Online* Medical Center and the responses that were given.

Please keep in mind no representations are made that in any way offer a diagnosis, treatment or cure for any illness or condition, either discussed or implied. Answers to questions are offered as information only and should always be used in conjunction with advice from your personal diving physician.

Fitness for Diving

Dear Doctor:

I am a breast-cancer survivor who has had reconstruction with saline-filled implants. I chose saline because I thought



that there would be less risk of problems with pressure. Are there any problems in diving with implants?

Thank you,
Mary

Dear Mary:

Fluids are basically incompressible and should not be affected by changes in pressure. I wouldn't be concerned at all about diving and breast implants.

Neurological Problems

Dear Doctor:

My niece wants to learn to scuba. Her seizures are 99.9% controlled on medication. State Div. of Motor Vehicles restored her driving privileges several years ago. However, her neurologist has not agreed to sign for her to take dive training. Please advise of latest findings regarding diving with controlled seizures.

Thank you,
Matt

Dear Matt:

Unfortunately, the answer is an emphatic NO! Anyone requiring seizure medications simply should not dive. Even though she is, for the most part, seizure free, and has been cleared to drive, diving is too risky. This is because, while a seizure above water may be of little consequence, underwater seizures with the usual loss of consciousness (LOC) almost always result in fatal drownings. Seizure patients should avoid any activity which may result in serious injury or death due to LOC, especially those that are recreational such as diving, rock climbing, etc. Your neurologist is 100% correct in declining to medically clear your niece for diving.

ENT Problems

Dear Doctor:

I dive the Great Lakes and now find that I develop a middle-ear infection every

time that I dive. I feel the pressure of the fluid in my ear and then visit my internist for an antibiotic prescription.

I do my best to control my descent rates but I don't know what else to do.

Any suggestions?

Thank you,
Chuck

Dear Chuck:

From the information that you provide, I can pretty much tell you that you have some type of obstruction to the Eustachian tube on the affected side. You probably exacerbate a chronic blockage with low-grade infection when you try to clear as you dive.

The best thing to do is for you to have an ENT evaluation to rule out obstruction from such conditions as nasal septal deviation, nasal polyps or tumors. If nothing is found — then you might try using a long-acting nasal decongestant (Afrin) or steroids (Decadron Dospak) prior to diving. Of course, do nothing without the advice of your family physician.

Pulmonary

Dear Doctor:

Could you please furnish me with information about the dangers of diving if you suffer from asthma. Many people in the medical fraternity have stated that people suffering from asthma, however minor, should never dive. Is this statement true?

Regards,
Dave

Dear Dave:

Until recently, most diving physicians pretty much ruled out scuba diving for sufferers from asthma. There are very good reasons for their feeling this way: airway liability with obstruction the hallmark of asthma, blockage being precipitated by exercise; inhalation of cold, dry air; dusts; fumes; and emotional stress. Asthmatics can sometimes be asphyxiated by severe attacks on the surface — one can imagine how devastating an attack would be under the surface of the water. Asthmatics over the age of 12 usually have chronic airway obstruction, which can also lead to lung over-pressure acci-



dents (blown out bleb) on surfacing from a dive, in turn leading to AGE (arterial gas embolism), paralysis and/or death.

This having been said — there are now very excellent diving physicians who feel that asthma should not be considered an absolute contraindication to diving. My friend Dr. Fred Bove feels that based on the available accident statistics, asthmatics completely controlled by medication and who have normal lung function studies should be cleared for diving. (Bove et al; *Annals of Allergy*; Vol 73, October 1995). Of course, each case should be evaluated on its individual merits and the final decision made by an aware diving doctor, not the diver himself or some other diving-related person.

Hazardous Marine Life

Dear Doctor:

I was told that women's nylons can protect against getting stung by box jellyfish. Is there any truth to this?

Thank you,
Al

Dear Al:

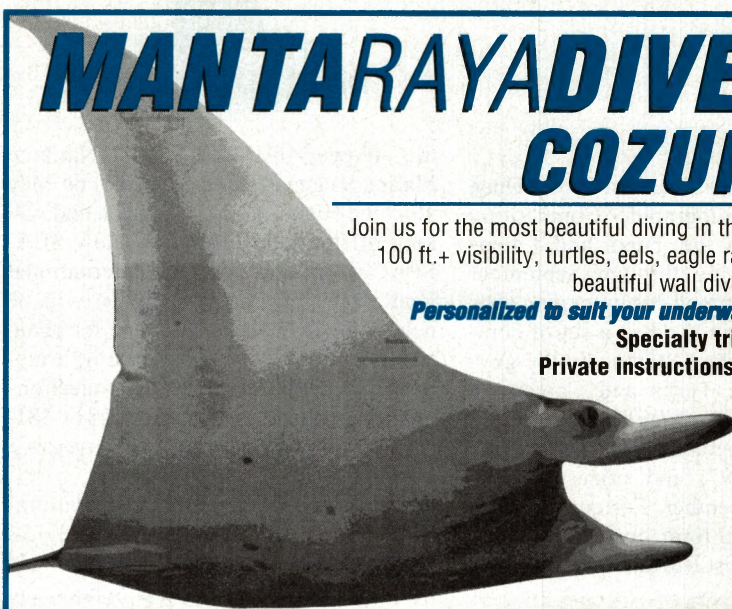
There is a great deal of truth in what you've heard — the nematocysts cannot penetrate clothing. The Aussies call the box jellyfish "badjellies" (sea wasp) and they are technically *Chironex fleckeri*. The Aussies even use stinger-resistant enclosures on their beaches—systems of nets anchored to the bottom. There is also a smaller variety of jellyfish, the irukandji, that causes a delayed reaction, often mimicking acute appendicitis or a heart attack. A thin layer of clothing or even hair can protect, and indeed, pantyhose have been used by surf lifesavers in Queensland, Australia, for years, called "stinger suits."

This sampling of medical questions and answers represents only a few of those on *Scuba Times Online*. To review the entire file or ask a question for yourself, go to scubatimes.com and look under the heading of Medical Center. Why take a chance if you have diving medical concerns? Your answer may only be a keystroke away.

Divers Alert Network (DAN) is another source for find diving medical help. Assistance is provided for both emergencies (919) 684-8111, and non-emergency questions (919) 684-2948. ■

Wayne Getchell is the president of Internet Scuba and site administrator of *Scuba Times Online*. Email: waynegetchell@scubatimes.com or www.scubatimes.com

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DIVER'S DATEBOOK

May

Turks and Caicos. The first World Open Underwater Photographic Competition will be held in the Turks and Caicos Islands from May through September 1997. The eight grand-prize-winning photographs will be issued as a set of commemorative postage stamps by the government of the Turks and Caicos. In addition, cash awards and prizes will be presented. Photographs are due at the end of October 1997, and prizes will be awarded in December. For contest rules and a registration form, contact the Turks and Caicos Tourist Board (809) 946-2321.

Dallas, Texas. The Dive Dallas Show will be held May 3-4 at the Dallas Market Hall. This year's show features over 200 exhibit booths, free seminars headlined by Stephen Frink and Burt Jones and much more. Tickets are \$6.00 for adults. For more information, call (972) 247-3222 or Email www.divedallas.com

Houston, Texas. Country band Little Texas will perform a benefit concert for

the Flower Garden Banks National Marine Sanctuary. The concert is on May 30 at the Hyatt Regency Houston and will kick off the consumer dive show SEASPACE. In addition, an International Underwater Photo Competition will be held at the dive show. Deadline for photo entries is May 10. For concert information, call (301) 713-3134. For questions regarding photo entries, call (281) 481-4704 or visit <http://www.seaspace.ycg.org>

Branford, Florida. The Annual Workshop of the National Speleological Society-Cave Diving Section will be held May 24-26 at the Branford School and includes presentations on cave diving in Turkey, Brazil, Mexico and Florida. For more information, call (904) 935-2974 or visit www.caves.org/~cds

June

Bonaire. The 11th annual Nikonos Shootout will be held in Bonaire on June 22-28. Underwater photographers of all levels are welcome to learn and compete. Participants will have the opportunity to

attend lectures and learn about the latest technology along with helpful hints. For more information, contact the Tourism Corporation at (800) 826-6247 or visit <http://www.interknowledge.com/bonaire>

Lofoten Archipelago, Norway. Predators Mammals & Us Inc. is offering diving and photo adventures with basking sharks of the Lofoten Archipelago, Norway, from June 24 through July 8. Expeditions and big-animal photography coaching will be led by Amos Nachoum, one of the world's leading marine wildlife photographers. For space reservation, contact your travel agent or dive-store travel organizer.

July

Charleston, South Carolina. An offshore shipwreck mapping course, sponsored by the South Carolina Institute of Archeology and Anthropology, will be offered July 12. The workshop will be conducted on the wreck of the *Frederick W. Day*, which was built in 1901 and now rests at a depth of 54 feet. For information, call Lynn Harris at (803) 762-6105.

RESORTNEWS

Cen Pack Dive Travel announces new services for divers visiting **Bikini Atoll** in the Marshall Islands. Now technical divers can find full-service nitrox and compressed helium for trimix. Accommodations on Bikini have also expanded with the construction of a second building, housing four more ocean-view double rooms, each with private bath and air-conditioning. For more information, call 800-U-GO-DIVE or Email cpde@aol.com

The in-house dive service for both La Ceiba and Casa del Mar resorts in Cozumel has begun a company-wide renovation and upgrade project for all aspects of **Del Mar Aquatics** operation. Changes include a new locker system and expansion of the retail center's line of Seaquest and Dacor products and stock items. All rental gear has been updated with new Dacor equipment, and camera rentals are available along with E-6 processing and underwater video service. Del Mar is currently building a third dive center at Nachicocom Beach. The Beach Club will

include a restaurant, dock, swimming pool, lockers, showers and a full-service scuba and watersports center. For information, contact Tropical Tours at (800) 771-4700 or Email at dive@neosoft.com

Aquatech/Villas DeRosa, in Akumal, Mexico, recently hosted Technical Diving International's Training Director, Joe Odom, while he conducted a rebreather course and general familiarization of the Uwatec/Drager Atlantis I Rebreather. Aquatech now offers rebreather certification and introductions for travelers to this underground diving destination. For information, call 011-52-987-59020 or Email at 105107.2445@compuserve.com

Experience The Adventure Tours, Inc. announces the Bay Islands Extravaganza, which will be held during October. Each week a variety of activities will be offered including free seminars on u/w photography, educational activities for children on marine life, seminars on specialty diving topics and environmental issues, training support for a reef-monitoring effort, spon-

sor contests and prizes for guests. For more information, call (800) 815-5019.

Bob Soto's Diving, Ltd. and Caribbean Dive Tours have teamed up once again to offer divers the chance to experience Cayman Madness, a value-packed dive vacation which offers a complete week's dive and party package at 1970's prices. The Cayman Madness '97 8day/7night dive-vacation package begins September 11 and ends October 23. For more information, contact Caribbean Dive Tours (800) 786-3483.

Underwater Diversions de Cabo, Cabo San Lucas, celebrates the arrival of its new dive boat, *Marisella*. The custom designed 39-foot vessel can handle 25 divers and 50 tanks. It is outfitted with an onboard head, a freshwater shower and large ice chest. Powered by twin motors, the new vessel will allow exploration of new dive sites, thus opening new prospects for the adventurous diver. For more information, call (800) 342-3143 or visit www.divecabo.com

Schooling with Hammerheads

SCUBA TIMES REBREATHER EXPEDITIONS

Everywhere you look, in almost every diving publication, you see rebreather articles, rebreather comparison charts and rebreather confessions. However, you rarely see the opportunity to actually dive with a rebreather on a week-long expedition to an exotic location. Now that has changed with the continuing *Scuba Times* Rebreather Expeditions.

While *Scuba Times* has been running limited expeditions since 1989, the magazine began utilizing rebreathers in expeditions in January of 1996, with a trip to the Silver Bank of the south Atlantic where thousands of humpback whales converge each year to mate and give birth. Since that time, more than 100 readers have dived and been certified on the Atlantis I rebreather in both the Silver Bank and in Cocos Island, Costa Rica, is home to the world's greatest aggregation of scalloped hammerhead sharks.

If you're a regular *Scuba Times* reader, you've undoubtedly read about these experiences. Yet, you also still have a chance to do more than just read about it. With several spaces still open on two upcoming jaunts, a few fortunate readers have the opportunity for the experience of a lifetime.

For the summer of 1997, *Scuba Times*, in cooperation with Uwaterc USA and TDI, has organized rebreather expeditions to Cocos Island, Costa Rica and to Palau, Micronesia.

This will be the first time in diving history that this many rebreathers will have descended on Palau and only the second time for Cocos after the *STM* inaugural expedition to Cocos in 1996.

In addition to diving with hundreds of sharks of varying species, each diver will be issued an Atlantis I semi-closed rebreather for the seven-to-10-day excursions. Instruction in nitrox and rebreather diving will begin immediately with supervised, in-water training the first day and is included as part of the expedition price. All divers will be awarded certification in both rebreather and nitrox diving from TDI, provided they pass those courses.

In early June 1997, the expedition team will spend one week in Palau. In August, a team will take a second-anniversary expedition aboard the 120-foot luxury liveaboard *Sea Hunter* with the hammerheads of Cocos on the agenda.

In August of 1996 a team of readers and diving professionals traveled to Cocos to dive with rebreathers on the *Sea Hunter*. Schooling hammerheads were

prolific and encountered on every dive, three dives a day. While some dives featured only small schools of 15-20 hammers, others, such as at the offshore seamount Alcyone, provided the seemingly infinite schools numbering into the hundreds.

While Cocos is now accustomed to the incredible advantages of rebreathers, the waters around Palau are unfamiliar with the new, high-tech breathing gear. The expedition in June will be the first time in diving history that a team of rebreather divers has explored the rich waters in Palau. In addition to a large population of a variety of sharks (gray reef, white-tip reef, etc.), Palau is also famous for its massive schools of fish, its underwater architecture and its stunning caves and caverns. Because most of the diving is in relatively shallow water (80-100 feet), the advantages of the rebreathers and the nitrox breathing mixture are dramatic.

In Palau, where sharks are already intimate and currents play a role in some dives, the rebreather phenomenon is untested. However, given the factors we learned in Cocos in 1996, the expectation is that eyeball-to-eyeball photo opportunities with large animals will be many. We also know that fish which normally shy away from bubble-blowing divers become more curious towards rebreather divers.

The second-anniversary dive to Cocos is scheduled during the exact dates as last year (August 10-21) in hopes of repeating the extraordinary success of the first year. ▀

For more information and to request applications, call *Scuba Times* at (800) 234-0060 or Email at exped@scubatimes.com. Cost of the the Cocos Rebreather Expedition is \$3495 per person. Cost of the Palau Rebreather Expedition is \$2695 per person.



Readers are invited to
apply for a space aboard
any *STM* expedition



Top: © Marty Snyderman, Bottom: © courtesy of Sea Hunter

RESPONSIBLE DIVER MONTH

It has happened to most of us. We're in a social situation when the topic of diving comes up and someone says, "Yeah, I'm a diver, but I haven't been in a few years (they mean 20). I really need to get recertified." The irony is that they really don't have to get recertified because C cards don't expire. However, most formerly active divers recognize the serious need for retraining. This is because diving requires us to be tuned in to what is happening to our bodies in order to avoid bends, embolism or a host of other potential physiological and environmental problems.

It's exactly this type of situation that the Responsible Diver Program is addressing with its highly successful Responsible Diver Month. Now in its third year, Responsible Diver Month is observed during May in dive stores nationwide. Its purpose is to remind divers of the need to have their equipment functioning properly and their skills refreshed.

Many participating stores from Florida to California will offer specials on equipment maintenance and refresher courses during May, allowing divers the opportunity to dust off their gear and have their skills refreshed early in the season.

Sponsored in part by the Diving Equipment and Marketing Association (DEMA), the Recreational Scuba Training Council (RSTC) and cylinder maker Luxfer, Responsible Diver Month serves as a great reminder for us to stay in practice and to have all of our equipment, not just our cylinders, checked regularly.

Participating dive stores will have banners hanging in their stores as well as free material for divers to take with them. In the last two years, over 500,000 tank stickers have been distributed to the public. Many divers are already familiar with the yellow, diamond-shaped "caution sign" sticker which was created for Responsible Diver Month 1996. Because so many stickers were distributed, they've

ended up on cylinders literally all over the world. Some divers have even begun to save the stickers, which are dated year to year and are creating a collection of the high-quality Responsible Diver materials.

This year another 250,000 tank stickers emblazoned with the Code of the Responsible Diver will be distributed free through participating dive centers. Additionally, thousands of Responsible Diver brochures will also be available in dive stores for customers to take with them.

"Scuba diving is one of the most exciting sports in the world. Responsible Diver Month helps remind us of how important it is to be informed, safe and prepared each and every time we get into the water," points out Fred Garth, Chairman of the Responsible Diver Program. "We selected May because it's the beginning of the dive season and the perfect time for people to think about refreshing their skills, getting routine maintenance or upgrading their dive gear."

Although statistics indicate that there are fewer accidents per participant in diving than in bowling, all certified divers should certainly be aware of the potential seriousness of a diving accident. With this in mind, safety should be of the utmost concern, and Responsible Diver Month

continues to push the issue of safety to the forefront.

Call your local dive center to see if it is participating in Responsible Diver Month. If not, it can sign up for free by contacting DEMA at (714) 939-6399. If the dive center is already participating ask about specials on refresher courses, gear inspection and maintenance. Finally, take the extra effort and make the trek to your local dive store as soon as possible. Check out the new gear advancements, have your old gear tuned up and think about a refresher course in the pool before venturing out on your first dive of the year.

It's all about being a safe diver, preventing injuries and insuring your total enjoyment of diving. ■



The Code of the Responsible Diver:

- Diving within the limits of one's ability and training level
- Evaluating the conditions before every dive and making sure that these conditions fit that diver's personal capabilities and training level
- Being familiar with and taking care of one's own equipment
- Respecting the buddy system during every scuba dive
- Accepting responsibility for the diver's own safety on every dive
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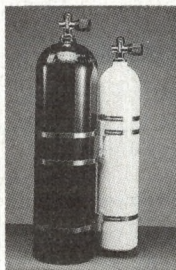
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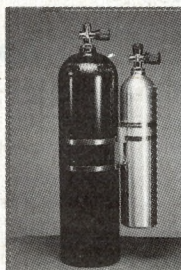
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PLEASE DON'T FEED THE BEARS

Dangers of the Shark-Feeding Frenzy

TEXT BY FRANKLIN J. VIOLA

The instituting of regulations in any sport typically follows some type of disaster incident. After too many unprotected craniums collided with cement roadways, laws were established requiring motorcyclist to wear helmets. In most situations, it seems that common sense would prevail long before legislation has to be passed. So why would we persist on popularizing feeding frenzies by teaching marine predators that divers mean food? Rote repetition of feeding wild animals only creates unnatural habitual behaviors and associations which can lead to life-threatening consequences.

This detrimental fate affects wild animals as well as people. In the early 80s, divers who visited Grand Cayman found great excitement in hand feeding an infamous four-foot barracuda which patrolled Waldo's Reef. But over time, this magnificent creature, nicknamed Snaggletooth, became overly aggressive to the point that divers felt it was dangerous to enter the water. Since closing the reef would not quarantine the perpetrator, the only solution was to destroy him. Unfortunately, those who contributed to Snaggletooth's untimely demise did not learn from their innocent, yet ill-fated, behavior. Instead, they moved on to teach this deadly trick to other unsuspecting wild creatures.

Underwater photographers who use wire-framing devices argue that portraits of fish are impossible to capture without enticing them with food. My stock response is, "Get a life; get a housing." Sure it's amazing how a can of Cheese Whiz will bring an angelfish in nice and close, practically modeling for your lens. It's also easy to photograph bears in a zoo and call it an adventure. Wildlife admirers in my native state of Texas increase their odds by setting out time-released grain feeders. But instead of Nikons, they use Winchesters and Remingtons to shoot animals at the trough. Personally, I do not

believe either of these methods is just or in any way sporting. Photographs of predators such as sharks behaving naturally are much more apt to promote public outrage toward the senseless slaughter of this species than images of sharks tearing away at a bloody cage.

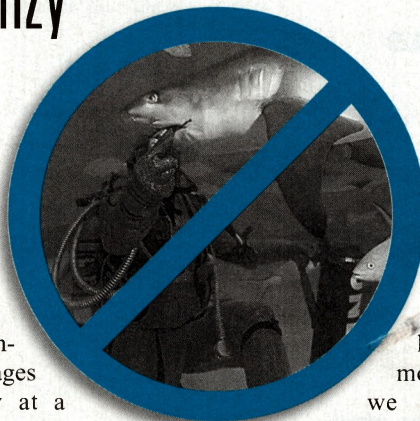
Unfortunately, the dilemma of feeding marine life comes down to money. A prime example is Stingray City. Divers of all levels pack into this tiny bay to interact with the "wild" rays. While this means big bucks for the dive operators, what does it mean for the stingrays? These wild animals are learning dependency on humans for food, a behavior change that is definitely not normal.

The notion that shark feeding is only done by properly trained divers is absurd.

While there have been few divers injured by a tail barb, the frequency of bruising skin hickeys from mouthing rays and flesh wounds by biting yellowtail snappers has risen dramatically among dive masters as well as new divers.

The notion that fish feeding (sharks in particular) is only done by properly trained divers is absurd. Where would they have gotten such training, from Sea World U? These divers are adventurers, some with lots of experience in the water and some with fledgling open-water cards. Neither is an expert on marine-life behavior, particularly predators, because even the textbooks don't agree. Now, even certification agencies are cashing in on marine life feeding by sanctioning Shark Diving specialty badges. What's next — alligator wrestling?

Unlike our terrestrial world, the ocean offers an incredible opportunity for encountering wildlife up close in their environment. There is no way scuba would enjoy its popularity as a sport if divers were limited as bird watchers to



observing fish through 10X binoculars. Every diver has told, heard or participated in stories about hand feeding a moray eel. But were we qualified, acting

macho or just being adventurous? What's to stop an adventurous student from trying to feed the local reef shark or an enterprising dive master from setting up his own shark dive?

Those who are truly concerned about the plight of our oceans and their inhabitants should support the education and increased awareness of the public to the natural state of these creatures. We feel sorry for dolphins caught in nets, so we lobby to save them. A photo of a shark giving birth evokes our protective nature. Images of sharks aggressively circling a diver with mouths agape in anticipation of food cause reactions of fear and public cries to rid the oceans of these dangerous beasts. Remember the mass slaughter of sharks by sport fishermen after *Jaws* was released?

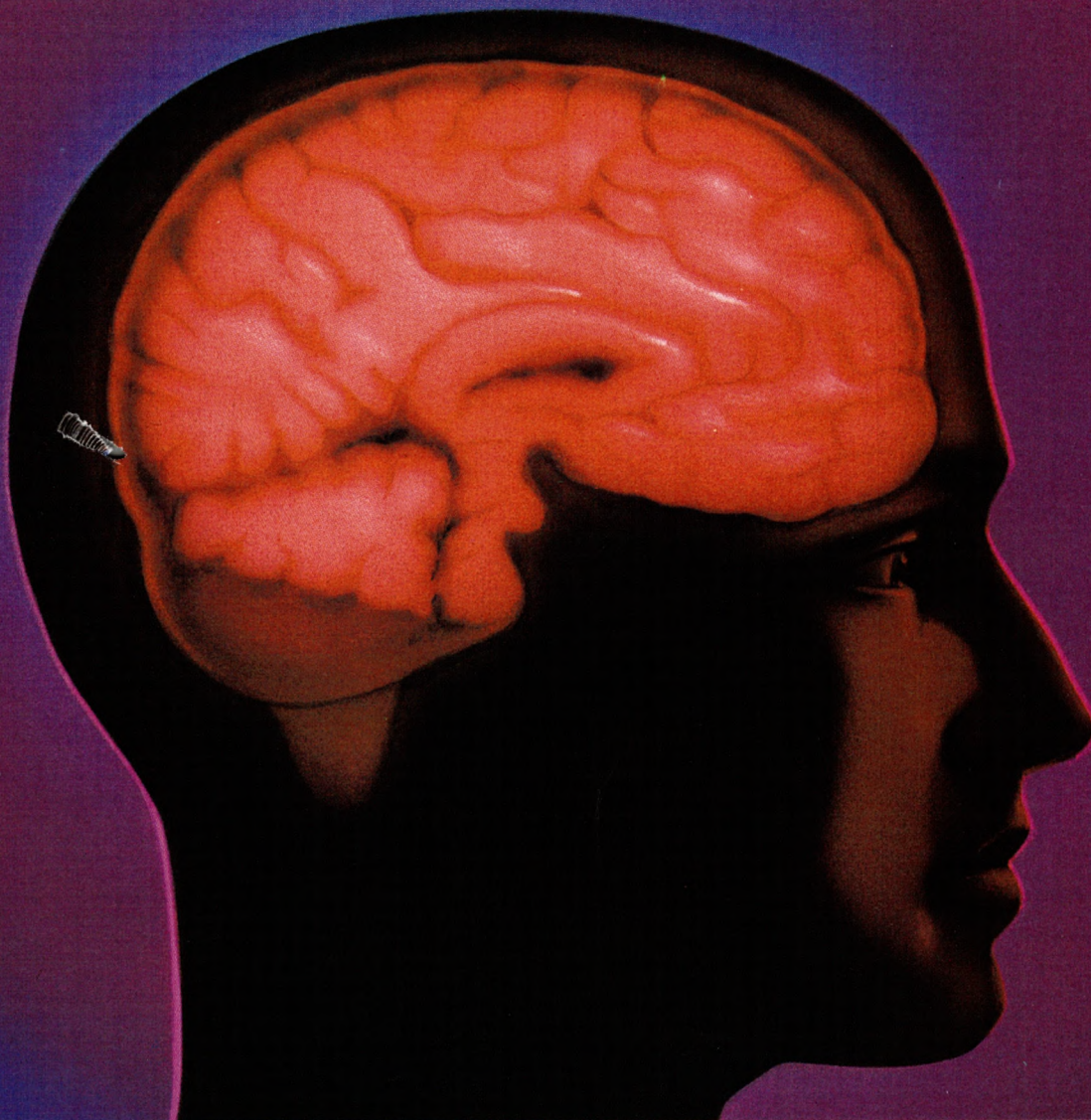
So how can we as divers continue to enjoy these creatures while ensuring that our behavior does not lead to their elimination? Do not feed the fish. Do not try to ride manta rays or turtles. Take pictures of fish in their environment and share them with your family and friends. Tell them how we, as divers, visit the undersea world to observe natural fish behavior such as cleaning stations. And explain that fish are like us: they sleep, eat, clean up, mate, raise their young and interact socially. All life, especially that which is wild, is worth caring about as their survival may ultimately determine our own. ■

Franklin Viola is a Contributing Editor to Scuba Times Magazine.

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